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ROCKET**

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By OSCAR
J. FRIEND**

**A THRILLING
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The cover painting by Howard V. Brown depicts a scene from Henry Kuttner's short story, **BEAUTY AND THE BEAST**.

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GOOD MONEY
IN RADIO
NOW

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IS GREAT, AND THEY
SENT REAL RADIO
PARTS TO HELP
ME LEARN
QUICKLY

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KNOW RADIO.
MINE NEVER
SOUNDED
BETTER.

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ONLY A FEW MONTHS AND
I'M ALREADY MAKING
GOOD MONEY IN
MY SPARE
TIME

THANKS

OH BILL! I'M
SO PROUD OF
YOU. YOU'VE
GONE AHEAD
SO FAST IN
RADIO

YES! I'VE GOT A
GOOD JOB NOW AND
A REAL FUTURE,
THANKS TO
N.R.I. TRAINING

HE SAID
NO
HE'S STILL
WAITING
FOR LUCK

BILL'S A SAP TO WASTE
HIS TIME STUDYING
RADIO AT HOME

SAME OLD GRIND --
SAME SKINNY PAY
ENVELOPE -- I'M
JUST WHERE I
WAS FIVE YEARS
AGO

GUESS I'M A
FAILURE.
LOOKS LIKE
I'LL NEVER
GET ANYWHERE

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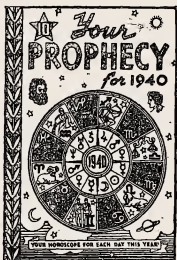
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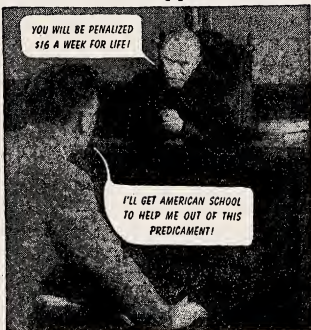
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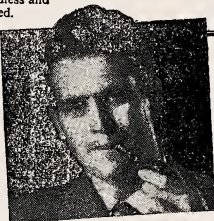
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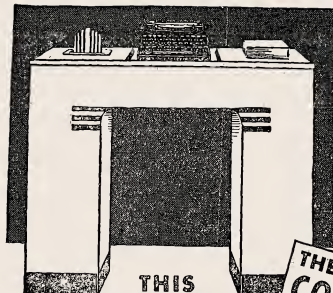
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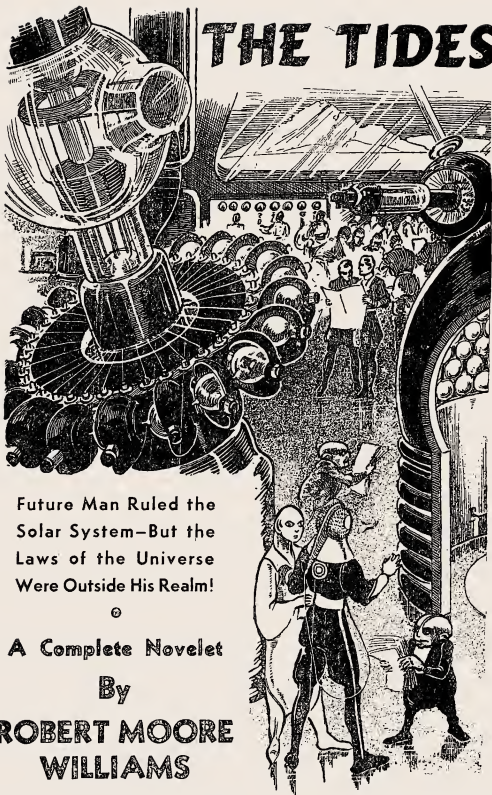
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OF TIME



CHAPTER I

Warning on Pluto

JIM DORN took a deep breath and walked slowly down the interminable hall. His eyes were firmly fixed on the metal door at the end. But he tried to act as if the whole 27 years of his life had not been spent in preparation for what was going to happen beyond that door. He tried to be calm, but he knew his heart was pounding like the sullen, rhythmic throbbing of the rocket blasts of a liner. There was perspiration on his forehead. He wiped it off, then rubbed his sticky palm on his pants.

He was a little dazed. Fragments of those endless examinations kept coming back to him. Grimly he put them out of his mind. The examinations, both written and oral, were finished. There only remained to learn from the

elmet, adding to the System's knowledge

lips of Joseph Brent how badly he had flunked.

Back on Earth he had thought the eliminations keen. Out of thousands, only seven had been chosen. But if the tests on Earth had been difficult, here they were almost impossible. And the competition was nothing like beating down ordinary opponents. There had been eleven brown dwarfs of Mars taking the tests. Every one of them seemed to know mathematics instinctively. Possibly they had been a little weak in psychology, as had been those three Greenies from Venus. Jim wasn't much worried about the Greenies beating him. They were good enough, but here you had to be better than good. You had to be damned near perfect!

The door at the end of the hall loomed before him.

He punched the button in the wall. While hidden visa-screens scanned him, he turned and looked through the heavy glass of the round window.

He had been on this planet a month. Theoretically he had seen that landscape often enough to get used to it. But every time he saw it, he hated it more. Pluto was so cold, so bleak, so barren, so utterly devoid of life. Just looking at it made a man's blood turn to ice, although he was safely protected by the thick walls of the vast laboratory that was Pluto Base.

Jim shivered. For a moment he forgot why he was here. He even forgot those examinations. He forgot everything except the hideousness of the landscape as cold as space itself, as forbidding and as threatening.

Then the door swung open. He turned from the window and stepped into the reception room. Joseph Brent's technician secretary rose to meet him.

"Good morning, 'Mr. Dorn,'" he greeted Jim with a proud, respectful smile.

Jim Dorn recoiled under the impact of that incredible salutation.

IN 1939 the greeting would have been common enough. The elevator operator, the receptionist at the switchboard, the bookkeepers, prob-

ably used it when the boss came in. In 8039 also, the salutation was used all over the Solar System, with the one exception of Pluto Base. Here the assembled scientists and technicians were plain Smith, plain Yakotski, plain Jones. No matter how distinguished a scientist might be, no one called him Mr. Smith, Mr. Yakotski, Mr. Jones. There was no ruling about it, no law. It was a tradition that dated back to the early days of the Base.

But there were five men here who were called mister. They were the masters, the co-ordinators of this vast storehouse of information. And, through it, they were masters of the whole world. It was in preparation for the job of co-ordinator that Jim had spent the whole 27 years of his life.

That was why he had taken all those tests back on Earth, had come here for final tests.

Now the secretary of Joseph Brent—Mr. Brent—was bowing to him very respectfully, and calling him Mr. Dorn!

Somewhere in the region of Jim's stomach, a hard knot formed. He was cold and then he was hot. Sweat was oozing out all over him. He swallowed once. Then he forced his will to take control of his body, made that knot in his stomach loosen up. Somehow, he grew calm. His eyes bored straight at the secretary.

"You said Mr. Dorn?" he snapped. He was thinking that the secretary had made a mistake. Or, worse yet, perhaps the man was playing with him, unlikely as that was. Certainly some mistake had been made.

The secretary bowed. "Yes, Mr. Dorn," he said. "The result of the tests showed conclusively that you were the man best fitted for the position of co-ordinator." He came around the desk. "I should like to congratulate you."

It was true then! In spite of all, he had been judged better fitted than those brown dwarfs, those Greenies, those seven keen lads from Earth. He had won!

In a daze he shook the hand that

was offered him, mumbled his thanks. "Mr. Brent will see you at once," the secretary finished.

He opened an inner door, ushering Jim through. Jim didn't hear the door click shut behind him. He was looking at the man sitting in a low, comfortable chair.

Joseph Brent was busy. Beneath his hands, rising flush with the arms of the chair, were two black boxes. Their tops were studded with small push buttons and by each button was a small bulb. Two of the bulbs were glowing. Brent's fingers pressed the corresponding buttons. He watched the visa-screen rising from the jumble of apparatus immediately in front of him.

The screen glowed with a soft, milky light. From it a man's face peered out.

Dimly, the screen showed the girder framework of a powerful telescope to the right of the man. Behind him, Jim caught glimpses of the photographic equipment of an observatory.

Brent didn't notice Jim. His eyes were intent on the screen. There was the trace of a worried frown on his thin, somehow haunted face as he listened to the whisper of words coming over the audio circuit.

Jim stood very still, watching and listening.

"This is the second instance of this occurrence that has been observed," the astronomer was blurting. "The first, two months ago, was reported by the observatory on Mars. It was described as a thin streak of vague light moving across the sky. Judging by its apparent speed, it was thought that the phenomenon was very near. But a careful check disclosed that the streaks of light were in reality far out in space. Whatever was causing them, was passing right by the Solar System. *And it was traveling at a speed much greater than that of light.*"

JIM snapped alert. An object traveling faster than light! It was impossible. It had to be possible, for the combined efforts of the scientists of Earth, Mars, and Venus had not been able to solve it. They had in-

vented the Gundstettor warped space drive, now replacing the rocket engines in the interplanetary liners. But, so far as he knew, faster-than-light flight had never been attempted. There was no need for it, at least in the Solar System. For eventual flight to the stars, something like that would be needed, of course. But solarjans were not ready as yet for voyages to the stars.

He thought he had heard incorrectly. Still he didn't say anything. He was to be a future co-ordinator, of course. At the moment, though, he was nothing but a young man who had successfully passed some very tough tests. Also, there was the fact that Brent was listening absorbedly, anxious to miss nothing.

There was pained, baffled wonder on the face of the astronomer on the screen.

He went on.

"The first phenomenon was naturally not reported to you for integration. The observatory on Mars believed their instruments were not operating properly. The streaks of light were visible for only a few hours. Then they abruptly vanished. Probably the matter would have been forgotten. But last night, with my own eyes, with my own telescope and with my own camera, I observed the very same phenomenon—"

Jim heard the raspy whisper of Brent's breathing. The eyes of the co-ordinator were fixed on the screen.

"This time the streaks of light were much nearer the Solar System," the astronomer continued hastily. "They were traveling at tremendous speed, following the same line of flight that the first had followed. I caught them visually. While I was watching, they began to slow.

"Mr. Brent, I am not positive of the exact nature of what I saw. The plates I instantly ordered exposed, do not clearly show the objects. But from what I saw, and from what I can understand of the plates, the objects were space ships, incredibly huge. I cannot emphasize too strongly what this may mean. Hertofores, we considered interstellar navigation remote in-

deed. "But it is not necessarily remote throughout the universe. Other races may have solved the problem. They may be crossing the vast voids of space to us. What their purpose might be—"

"Where did they go?" Brent interrupted. "Give me the rest of the story."

"This is guess-work," the audio system whispered. "But they seemed to be passing the Solar System as if they had no interest in it. Possibly they had not discovered the planets circling the sun. Suddenly though, they seemed to see us. They began to slow and to turn. When they had slowed to roughly the speed of light, the illuminated streaks vanished. Without that illumination, the ships were invisible."

"We do not know whether they are coming toward us or not. We have maintained constant lookout, but we have seen nothing. With your permission, sir, I suggest this information be integrated. I believe it is of great importance. I doubt if our integrator, vast as is the knowledge stored within it, will be able to give us any clue. You, of course, will know best."

"The information you have provided will certainly be filed for integration," Brent answered swiftly. "I commend you for calling my attention to it. Meanwhile, as chief astronomer of the System, you will order all observatories to discontinue all other lines of investigation. They are to concentrate the scopes on detecting the presence of these vessels."

"Yes, Mr. Brent," came the answer.

Brent's long, supple fingers thumbed the buttons under his hand. The screen went momentarily blank. But came to life again almost immediately. The inquiring face of a young man looked from it.

"Accept information for filing, from the chief of our observatory," Brent ordered. "See if similar information has been filed in the past. Determine how these facts fit into our general knowledge—if they will fit at all."

Jim stood motionless, saying nothing,

while Brent issued a dozen orders to as many specialists. Jim was still in a daze. He trembled from the nervous strain of the tests, the worry of whether he had passed them. It was a numbing shock, knowing that he had not only passed them, but had actually been selected as a future co-ordinator. And then, before he had had time to assimilate that shock, he had been sent into the presence of Joseph Brent and had overheard a conversation that made his senses reel.

Flight swifter than light—Fleets passing the Solar System—Fleets from somewhere out in space. What did it mean?

CHAPTER II

To the Defense

BRENT rose from his chair. He came across the room, a tall thin man with a haunted face and eyes that well knew the meaning of pain. Jim took the outstretched hand.

"Mr. Dorn, I am sorry to have kept you waiting, but a matter came up that required my attention. Now I am free for a few minutes. I should like to congratulate you on your achievement. I imagine my secretary has told you the glad news."

The grip of the hand was firm on Jim's. He tried to express his thanks, but the words stumbled. Brent smiled.

"I know it is bewildering to you, Mr. Dorn. It was like that to me when I learned I had been accepted. I was younger then, much younger. I thrilled at the opportunity that opened before me, the chance to be of service to the System." He sighed. "Well, that was many years ago. Now I am glad to relinquish to younger hands my part of the tasks facing the System's united races. I hope my job has been well done. Well done or ill done, the part I have played is over. Soon I shall explore a greater mystery than any we have attempted to solve here."

Jim caught only a hint of the mean-

ing back of the words. He was suddenly conscious that the huge room, in which he stood alone with Joseph Brent, was absolutely quiet. Not even the faint hum of a distant generator disturbed that tense hush. He faced the older man, and his voice was a frightened whisper.

"You mean—that you—that I—"

Brent nodded. "I mean that you will immediately take my position. You will be one of the five co-ordinators of the unified science of the System. Before the hour is out, I will accept your oath and inform the other four of your selection."

Jim dared not breathe or think. Up to a short hour in the past, all his thoughts had been devoted to winning. Now he had won. He only knew that he was suddenly weighted down with the most enormous responsibility man could conceive.

"But, sir—" he started to protest.

Brent waved the protest aside.

"I have no fear of your ability to carry out your part. The examinations were almost inhumanly rigorous. The unfit were ruthlessly eliminated. Your whole life, from the hour of birth to the present, has been checked. No detail, however unimportant, has been overlooked. There is no possible doubt, Mr. Dorn. In giving over my unfinished tasks to you, I give them to the one person, outside of the four other co-ordinators, who is best fitted to achieve them!"

For a second there was silence. Then Jim spoke.

"I meant to ask something else, sir. I have, naturally, a theoretical knowledge of the duties I will be expected to perform. However, I have had no practical experience. Must I be immediately thrust into this position? Wouldn't it be better if I were given at least a week—a month, if possible—to acquire first-hand knowledge?"

Brent smiled his slow, sad smile.

"If I needed anything to assure me of your fitness for the position, that question would do it. Your request is fair. You, of course, do not now why you are being thrust forward so rapidly. A few men do know, but you are not likely to hear the reason from

them. The reason, Mr. Dorn?

"I have incurable heart trouble. At any moment I may die. The best medical science in the System has admitted that nothing can be done for me. When I die, someone must be on hand. Someone must be ready, at a moment's notice, to take over my unfinished duty."

He spoke the words softly, but the brave smile did not leave his face. Jim couldn't escape the pain back of that smile, the hidden anguish glittering deep behind the eyes.

"I'm sorry, sir," he stammered. He didn't know what to say.

"There is no need to be sorry. Death is only another mystery. Out here, staring from these windows at the black void of space, one grows accustomed to mysteries. I am not afraid to face the last one."

DORN never remembered exactly what came after that. He knew Brent took him over the vast laboratory that was Pluto Base. It was so far removed that no threat of invasion could reach it. Extreme cold was natural to the planet, making easy the reactions that were unobtainable on the other planets. There the scientists of Earth, Mars and Venus co-operatively ruled the Solar System.

For it amounted to no less than that. Each planet had its own government, was free to make the laws that suited its own inclinations. Over all were the scientists. And over the scientists were the co-ordinators—two brown dwarfs from Mars, one Greenie from Venus, two men from Earth. Each co-ordinator, in turn, remained at Pluto Base for a one-year period of duty.

Jim Dorn knew a little of the integrator, the machine in which every fact of every phase of life was stored. In the tremendous assembly of coils and tubes, gears and levers, the operation of every natural law was expressed.

The integrator was an outgrowth of the calculating machines known for thousands of years. So complete was the information stored there, so accurate was the relationship of fact to fact worked out, that the machine was

almost a vast mechanical and electrical brain. It needed only human fingers on the control keys to answer any problem presented to it. But men, of course, had to give it the facts and natural laws from which it was to work.

Jim remembered that Brent motioned toward a group of men working with an odd helmet-shaped instrument.

"They are experimenting with a method of gathering thought impulses and feeding them directly to the integrator," Brent stated.

Jim nodded. He did not know how soon he was going to need that information, or how vitally. He could not guess that the most problems in history were arising. Even the vast store of information in the integrator would provide no answer to them.

He followed Brent back to the control room. Smiling his sad smile that rose from the depths of incredible agony, Brent told him to raise his right hand.

"I, James Dorn"—he heard himself repeating and the meaning of the words froze him cold—"do most solemnly swear—that I will uphold the office of co-ordinator of the Solar System—to the utmost of my ability—I will never use my power for personal gain or personal glory—I will allow nothing, even death itself—to come between me and my duty—"

The oath was finished. To the very depths of his soul, Jim was cold. "You are now co-ordinator," he heard Brent say. "You will complete my term of duty. I, of course, will remain to aid you, as long as my heart holds out."

Jim knew then exactly what the oath meant. He was pledged to serve the System as long as his heart held out!

Somewhere in the room a bell was ringing. For all its softness, it was an emergency bell. He sensed the gaining tension of the sound. He whirled. On the panel near the co-ordinator's empty chair—a red light flashed!

"I'll handle it," Brent snapped. "You have enough to learn without facing an emergency in your first official act."

HE walked swiftly across the room. Dorn strode right behind him.

Brent's fingers danced over the buttons. The red light went out. Instantly the screen came to life. This was a time for action, and the operator in the central office snapped:

"Station on Triton is flashing an emergency call, sir. Huge ships are approaching, maneuvering toward the copper mines. Shall I put Triton on direct!"

At Brent's affirmative nod, the screen went blank. A click, and a vastly different scene burst into sight. The operator in that far-off station could not be seen. He had his viscope focused on what was taking place outside.

Five tear-drop ships were dropping down out of the sky, smoothly and effortlessly. They were larger than any liner that had ever been constructed in any workshop anywhere in the Solar System. No jutting fire showed where rocket tubes were operating from the black hulls. Their noses pointed toward the round dome in the gash below, the dome that housed the rich copper mines of Triton, Neptune's moon.

Only then did Jim hear the voice of the operator in that station far across space.

"They came down very rapidly and have ignored all efforts to communicate with them. We do not know whether our sub-ether radio waves are getting through to them. So we are trying now with waves of standard length. We have been unsuccessful—"

"Space ships," Jim heard Brent whisper. "They don't belong in this System."

Then Brent gasped. There was pain in the sound. Jim flashed a quick look at him, saw that he was staring at the screen.

From the nose of the leading ship, a pale haze shot out. It stabbed down toward the dome of concrete and steel that protected the mines. Where it touched, the dome crumpled. Released air pressure silently exploded into black space.

Even across the millions of miles of space, Jim saw the upward surge of black objects from the dome. Dust, broken machinery, men, rode the blasting wave of air.

"They're attacking!" Brent cried. "Without warning, without cause they are attacking our mines on Triton!"

Brent jabbed at the buttons on the panels, under his hands. Auxiliary screens flashed to life, showing startled faces. But Jim watched the main screen. Swiftly, unerringly, the five huge ships settled around the smashed dome. He saw ports open in their sides. Strange men emerged.

At that distance, he could not distinguish details. But he knew that the creatures swarming from the ships were unlike any life that had been found on any of the planets. They moved with great, ungainly hops toward the burst dome, vanished inside it. Then the voice of the operator came back. His voice was wild with fear.

"Three more ships are approaching. Two of them are dropping down toward the mines below. The third is turning toward this station on the peak—"

FOR an instant the visa-screen glowed red. The operator screamed in frantic terror. The sound gurgled once, suddenly was cut off. The screen went dead.

Jim saw that Brent's face was white. The co-ordinator looked up at him, hissed from between clinched teeth.

"This means war!"

His hands played over the buttons. From Pluto Base, his call went out to the war fleet of the system. The word of the co-ordinator was law. In the underground hangars of Pluto, where part of the fleet was kept, men heard his call to action. The screen in that underground base revealed crews running from their barracks. Long lines of men entered the hulls of long sleek cruisers that had not been used for over a hundred years. But those ships had been kept in readiness against the day when they might be needed. Now that day had come, and the ships and the men were ready.

On Mars and on Earth the same scene was being repeated. The brown dwarfs flung themselves into their fighting vessels, answering the ancient call to war. Manned by men, the ships of Earth began to take to the skies. From far-off Venus, close to the Sun, an answer came. The Greenies were streaking through the fogs that forever veiled the surface of their planet. With their comrades, the dwarfs of Mars and the men of Earth, they sought battle with the enemy that had disturbed their well established peace.

In the space of minutes, Jim Dorn got a glimpse of the operation of the vast system he was to lead. His eyes leaped from visa-screen to visa-screen as he tried to see everything that was happening. He forgot about Brent until he suddenly realized that the voice of the co-ordinator had died out.

Dorn jerked around. Brent's hands were tearing at his chest. His face was purple, his eyes were bulging. His voice came in an agonized whisper.

"The excitement—too much—for my old heart— You carry on—"

All at once, every muscle in his body went limp.

CHAPTER III

The Tides Storm High

JIM lifted him out of the chair, laid him tenderly on the floor. Then he flung himself back to the control seat. He knew Brent wouldn't have wanted him to waste time mourning over a body from which the spirit had fled. Brent would have ordered him to that chair, to the rising duties that faced the new co-ordinator.

Jim Dorn was now, at least temporarily, co-ordinator of the System.

In less than five minutes, all that was mortal of Joseph Brent was removed from the room. Within ten minutes, in answer to Dorn's command, every man who could be spared from essential duties was trying to crowd into the huge office of the co-ordinator. In any of a hundred lines

their knowledge was greater than his. But they were specialists. He alone had specialized in the whole.

Swiftly he explained the crisis to them, secured their promise of complete co-operation, a promise they would support to their last breath. Thirty minutes later, he was in touch with a brown dwarf named Chitor, who had been relaxing on Mars. He and the other four co-ordinators leaped to the return to duty. They were Rudo, a dwarf; Starm, a Greenie; Albert Early, a man.

In less than an hour, under Jim's orders, the visa-screens and broadcast systems of Earth were pouring out the news of the attack to the startled millions of men. On Mars, the dwarfs were listening. On Venus, the Greenies watched the screens. All over the System, intelligent life looked up at the sky, wondering frightenedly what was happening out on Triton, the giant moon of Neptune. Space ships from the stars— It seemed incredible. What did it mean?

Then Jim got in touch with the commander-in-chief of the cruisers that had left Pluto Base. They were already driving across the void toward Neptune.

The minutes grew into hours. Somebody brought him food. He wolfed it, kept his eyes on the many screens, his fingers on the buttons.

Information came up from the men in charge of the integrator. All the knowledge that had been gathered concerning the Solar System and the universe had been sifted, with one result. This was the first time that alien ships had crossed space, the first time streaks of moving illumination had been observed in the void. The vast knowledge stored in the integrator could not explain how, what or why.

Despite the duties and responsibilities that hedged him in, Jim found time to think. One fleet crossing interstellar space he could, by stretching his imagination to the limit, understand.

But two fleets— The streaks of light seen by the observatory on Mars he knew meant a passing fleet.

THEN the commander of the Solar Fleet, driving down on Triton, called back to Pluto Base. Dorn had ordered the visa-screen open to the fleet at all times. Thus the call came through instantly.

"We have arrived and are at the mine. The dome is a complete wreck, sir. Every man who was stationed here is dead. The invaders have vanished, utterly vanished—"

"What!" Jim roared. "Are you sure?"

"Beyond the shadow of a doubt," the commander replied, almost apologetically. "They seized all the available metal—iron, copper, aluminum, even the steel supports. Apparently they loaded their ships and left immediately. Are there any further orders, sir?"

"Search the whole moon," Jim ordered.

He snapped off the screen and leaned back in his chair. He had anticipated a battle. He had been desperately afraid that he was throwing the strength of the fleet against an enemy with superior weapons. Instead, the enemy was gone.

On the panel at his right, a tiny lamp glowed. He pressed the button. The face of the chief astronomer appeared on the screen. Behind the heavy glasses his eyes were blinking furiously.

"We have picked up that fleet again. A short time ago, the streaks of light reappeared in space. Unquestionably it is the same fleet that attacked Triton. The ships have resumed their voyage on into space, sir. They are rapidly disappearing."

Abruptly, Jim saw a part of the meaning. For some unguessed, unknown reason, intelligent life was fleeing across the universe! That fleet had not crossed the void of space to attack the Solar System. They had merely passed near it, had stopped long enough to seize a supply of metal. They had not stopped to parley. There had been no time for that. They located a mine, struck down the low form of life that operated it, seized the metal, then continued their flight.

He rose, went to the window and looked out. The barren, utterly lifeless landscape of Pluto, cold and inimical as space itself, mocked him through the heavy glass.

His eyes went up. Against the black backdrop of space, the yellow suns glowed. Little balls of fire gleamed out there, lost in a vast immensity. Between them black space boiled. He shivered. He knew it was his imagination, but it seemed to him that space itself was threatening him. Looking out the window, knowing that across the void between the infinities intelligent life was fleeing, he got a vague hint of some vast cause operating through all time and all space. He turned back to the co-ordinator's chair, pushed the connection that led to the men in charge of the integrator.

He knew he was facing a problem too big for one mind to solve. He was fiercely glad that through the integrator he could draw on knowledge wrested from defiant nature by the great minds that preceded him. There lay all the knowledge gained by Earthmen, the dwarfs of Mars, the Greenies of Venus.

"Find the greatest single menace to all life in all the universe," Jim Dorn said tersely.

From the screen, the face of the attendant gibbered back at him.

"That's an order," Dorn shot out. "Something is happening in the universe. Other races, from planets circling other suns in space, have detected the menace. They are fleeing from it. I'm depending on you to discover what it is."

* * * * *

CHITOR, the brown dwarf, squirmed. Beside him Rudo sat impassive. Starm, the Greenie from Venus, stared from half-shut eyes, never moving a muscle. Albert Early swung one long leg across the arm of his chair, puffed slowly at his cigarette.

They were the four co-ordinators of the Solar System's science.

Jim Dorn faced them. He began to speak.

"Gentlemen, there is no point in reviewing the facts of these last forty days. You are as familiar as I with the report of the first streak of light seen by the observatory on Mars. You remember the attack on Triton's mining dome. You know that our astronomers, in constant searching of the skies, have detected other fleeing fleets, all speeding in the same direction.

"You know that our System was again attacked. This time the fleet struck at Pittsburgh, on Earth, seized all the available supply of metals. Before they could flee, our own fleet moved in to attack. We captured one vessel. The commander of that ship, Halar of the Halones, is now being brought here. His race comes from a star that we have not even discovered. With the thought-helmet, we will be able to question him."

He paused. "I am afraid that he can only verify for us what we already suspect. The doom of the universe is at hand.

"Peoples from the stars, from the worlds lost in the far corners of the universe, are fleeing. We have seen their fleets passing. Twice we have been attacked.

"As soon as I saw what was happening, I ordered the integrator used in an effort to discover the unknown menace that must be sweeping the universe. No single mind could have told us what was happening. But in the knowledge gained by all our races, we found what we know to be the only possible answer.

"The outward flowing tides of time and space that form the expanding universe, with which we are familiar, have reached the outer limits of their flow. Like a pendulum that has reached the limit of its swing, the tides turn back. The vast void of space has now become a *contracting universe*."

Chitor ceased his squirming. Rudo twisted in his chair. Starm was still impassive. Early lit another cigarette.

Jim went on.

"For hundreds of millions of years, the great tides of time and space

flowed outward, creating space-time as they advanced. Now they flow back. Now the outermost stars that the clearest night reveals are drawing together again. Time and space are shrinking them toward the central core from which they were burst in some super-novae, billions of years ago. The peoples who emerged on planets circling those distant stars, detected the approach of the catastrophe. They are fleeing before it, as animals run before a forest fire on earth. They must hope the inflowing tides will not reach to the very core of the universe.

"We do not know exactly how fast the incoming wave is sweeping. It is gaining speed by geometrical progression. Probably it is already moving much faster than light. Certainly the fleeing peoples have used Post-Lorenz-Fitzgerald speeds in trying to escape. Our integrator indicates that we have a little less than twenty years in which to solve the problem of flight swifter - than - light, twenty years in which to escape. Even if we do succeed, we will be able to save only a few thousands of all the billions who live on our planets. . . ."

HE stopped speaking, but his thoughts went on. In twenty years, Earth, the planets, the sun itself, will be swept together into a tight, flaming ball. The heavens will be rolled up like a scroll. Life—and its chief emergent factor, Man—will be swept away.

Man, who long ago fought wild beast and wilder man, fought himself most of all, and finally conquered his own planet—that shrewd, heroic animal, who had raised itself to godlike serenity, was doomed by an insensate, immutable law of nature.

Because Jim Dorn was a man, his thoughts ran on ahead of him.

Not so long ago his race had fought the clumsy rocket ships, found a landing on the Moon and died there. But other men, in other, better ships blazed the trail over again. They reached the moon, and this time they did not die there. They lived to go beyond that trifling jump, to battle the

dry death of ancient Mars, the sultry death of steaming Venus, the barren, cold death of Pluto. Man, the emergent factor, who quickened to civilization the life of two other planets, who conquered all the powers of hostile nature, in that ultimate inward sweep of the tides of times and space, would be swept away.

For this was no desert monsoon, no hurricane wind blowing across a tropic sea, no fury of wind, ice and snow from the north pole, no tidal wave smashing a fertile coastland.

This was the inward flow of the tides of time and space!

The sun and the planets will be swept together into a ball. The heavens will be rolled up like a scroll. The long upward striving of Man was destined to end in the last hostility of a universe inimical to life.

So Jim Dorn's thoughts ran. He choked, thinking of the billions who must die, even if success was attained. But it was his duty to make every effort to succeed. Perhaps only thousands might escape. But on some world near the center of the universe, the life of Man must go on.

It wasn't even certain that those pitifully few survivors might escape. Before that, the contradictions of the Lorenz-Fitzgerald contraction must be solved. If they weren't—

It was then that Jim Dorn realized how important the concept of race immortality is to human sanity.

CHAPTER IV

Defeat of Hope

THE clang of a bell announced the arrival of Halar of the Halones. Grimly, the co-ordinators waited until the guards brought the giant in.

He had four enormous legs, but he stood upright. He had four huge arms, and they were crossed on his chest. His eyes were multi-faceted. A captive among enemies, the best he obviously expected was death. Yet Halar of the Halones did not bow his towering head in fear.

Jim felt a surge of admiration for the alien. When the thought helmets were brought in, Halar grasped their purpose at once. Gratefully he learned that men were not his enemies. Like his own race, they were victims of a common fate. Both were fighting the dread thought of racial extinction.

Then Halar's answering foreign thought raced swiftly, clearly, through the helmet. For a moment, Dorn dared hope that Halar would declare the integrator wrong about the contracting universe.

"No, little creature," Halar replied sadly. "The integrator was right. At great speed, the universe is contracting. We barely managed to detect it in time to escape—and then but a few of us. . . ."

Halar's thoughts grew vague. Jim felt the pulse of a vast sorrow as the alien remembered the world he had quitted. Now that world and all its inhabitants were gone.

Halar's thoughts suddenly cleared. He was sorry, he explained in hasty courtesy, that his race had plundered that city on Earth. They had not thought to find intelligent life there. They had had no time to look. They needed metal. Behind them the advancing waves were roaring.

Jim nodded understandingly. In similar circumstances, he would have done the same thing.

But there was no time for sorrow. Again his mind went out to the attuned brain of the Halone. Halar understood what was being asked of him.

"Yes, we fled inward, hoping that we might find refuge near the center of the universe. There the inflowing wave might possibly not come."

Halar caught the tenor of Jim's thinking, understood the problem facing these little creatures who had captured him.

"Speed faster than light? Yes, I will explain it to you. I will also teach you how to build the drive. It is a matter that touched on extra dimensions, but I feel certain you can grasp it." Halar hesitated. "Will you allow the crew of my ship to go with you?" he asked anxiously.

"Yes!" Jim shouted, ripping off the

helmet. He turned to the co-ordinators. "He'll help us!" There was exultation in his voice.

The exultation died as he looked at them. They were paying no attention to him. A white-faced, babbling mathematician had come into the room. He shoved long sheets of paper at the other four co-ordinators. As they examined the papers, despair rose over their faces.

Chitor shoved the sheets at him.

"Jeem," he said in his squeaky voice. "It is hopeless."

"What do you mean?" Jim demanded. "We just got Halar's promise to help us."

Chitor shrugged. "It does not matter. The integrator has given us a most complete answer. Its mathematics are not to be questioned. There is no hope."

JIM saw the finality on the face of the dwarf. The hope that had flared in him when Halar promised ships died out.

"What is it?" he asked tonelessly. "What has happened?"

"Nothing has happened," Chitor answered. "We can flee inward and thus escape for a few hundred years. But it will do no good. These equations show conclusively that not even the suns at the center of the universe will escape. The inflowing tides will wash over them, will contract the whole universe to an area not much larger than the size of our sun."

"That area will be a blazing hell of bursting flame. Under the tremendous pressure that will exist, it will have a temperature higher than anything we can imagine. It will continue in that condition until pressure again forces the tides to erupt outward. Life of any kind whatsoever has absolutely no chance to exist in the blazing core that will be the center of the universe."

Jim grabbed the papers, swiftly examined the equations. There was no room for hope in all those calculations. He raised his eyes. Chitor had seated himself again. Rudo was pacing the floor, his eyes going to the windows where the blackness of space

leered at him. Starm had not moved. Early was looking up and his lips were moving in silent prayer.

"We can't give up like this!" Jim blazed. "There must be something we can do!"

Starm opened his eyes.

"Name it," he said. "We will do it."

Jim groaned. Whichever way he turned, he faced a blank wall.

Halar of the Halones stood unmoved. He did not understand this conversation. He had been trying to help these little creatures. Now something seemed to distress them.

Even without contact, Jim felt Halar's mental request, coming from the helmet he held in his hand. Jim replaced the helmet on his head, explained to the Halone what had happened.

Halar asked for the equations. After long, thoughtful scrutiny, the Halone sighed. The sound somehow reminded Jim of Joseph Brent.

"It is too bad," said Halar. "My people flee in vain. From the arms of death, they flee to a fate more hideous."

He paused and his multi-faceted eyes focused on Jim.

"My friend, would it be possible for me to use your radio equipment to warn my people?"

"Certainly," Jim answered. He waved his hand to the guards. They led the Halone away. He took both thought helmets with him. As he walked, again he somehow reminded Jim of Joseph Brent.

"For as long as your heart holds out—" That was what Brent had said. He had meant every word of it.


Jim took a long breath. "Gentlemen," he said. "It looks like we're whipped. But I remember Joseph Brent. I remember the tradition back of us. To that tradition we must be true. Our whole history—the history of all races—is the history of constant struggle against nature. This may be the last fight of life in this universe. Shall we go down as cowards, or as inheritors of a proud tradition?"

In the silent room, the growl of their answer was very loud. They

were co-ordinators, they were scientists. But when necessity demanded, they were also fighters.

Jim strode to the control chair—the very chair in which Joseph Brent had died. He pushed a series of buttons. The communications officer was still on the job. He would remain on the job to the end.

"Advise all peoples of all planets that the Solar System has, at the most, twenty years of life ahead of it," he ordered. "Explain what is happening. There must be no distortion or falsification. Our people must know the complete truth, that they may act sanely."

 N Earth, the massed population already knew that something was wrong. They knew about those attacks, those passing fleets. They did not know what it meant. Science had not been sure of the meaning. Now there was no questioning the fate that threatened.

Jim could imagine the shock that would pass over Earth. Fear might come first, mad, wild fear. But it would subside. Resignation would take its place. He knew, though, that the billions on the green planet would not give up hoping. They had learned to trust their scientists, the self-sacrificing men who slaved for them.

Always in the past, when danger threatened, Earth's scientists had saved mankind. When disease raged among them, scientists braved disease. Many of them died, but in the end they conquered. There had been war, and the scientists had fought against that. It had been a long fight, but eventually it had been won.

They would go on hoping, even as they prepared to die. Until the ultimate moment, they would be confident, knowing that on Pluto Base at least two men were fighting for them.

On Mars, the brown dwarfs would look up to the sky. Those steeled little people knew more than their share of death's insignificance. They lived on Mars, where the last breath was ever near. But they would look toward Pluto Base, knowing that two of their kind fought to save them from

this last desperate thrust of hostile nature.

On Venus, the Greenies would not see the sky. It would not matter. They knew that somewhere beyond the eternal clouds, a Greenie named Starm added his strength to the forces fighting for the whole System. If death came—

Well, on Venus you learned to look death in the face and call him friend. Here, amid steam, rank vegetation and perpetual heat, death had many forms. Meanwhile, for whatever time was left, they would put their faith in Starm.

Jim Dorn faced the four men. Chitor had lost his restlessness. Rudo huddled in his chair, his soft eyes haunted with grim thoughts. Starm's skin had lost a little of its green, but he still stared from half-closed eyes at nothing. Behind that impassive face, the keen mind never ceased to work. Early's fingers were yellow with the stain of many cigarettes, and a growth of untouched beard covered his face.

Two months of desperate effort lay behind them. Two months, during which the inward-rolling tide of time and space crept invisibly ever nearer through the skies overhead. Apparently there was no change in the sky. The stars could still be seen, shining against the black velvet of space. The majestic constellations still moved grandly overhead.

BUT the fact that the stars could be seen meant nothing. Light that had started its journey centuries in the past was first arriving now. Perhaps the star from which the beam came had been blotted out. No one could tell. The light would still go on centuries from now.

There would be no warning, for the rolling tide was traveling faster than light. There would be a sullen wave of blackness, deeper than the darkness of space, and it would be a blackness that would never end. It would come faster than the flicker of an eye. No one would see it come. One instant the world you knew would be around you. The next instant, there would be nothing. You would not even have time to know what had happened. Death, faster than the lightning flash!

Jim Dorn faced the four men. His voice rasped harshly, for he felt his back was to the wall. He was fighting defeatism as well as nature.

"We have been forced to discard as unworkable the suggestion put forward by Starm. A defensive force field, erected around the entire System is impracticable. The field would have to exist in space and time, and there would be no space or time in which it could exist. It would collapse instantly."

He stopped speaking, and his eyes ranged over the four. There was no

[Turn Page]



BOB: Say, fellow, are you taking Ex-Lax? I thought that was for women and kids.



JIM: Wrong, Big Boy! I've been taking Ex-Lax for years. It fixes me up nice!



JIM: Oh yeah! Well, I'm pretty husky... I need a laxative with a wallop.



JIM: Don't kid yourself! Ex-Lax tastes good, but it's plenty effective!



LATER
BOB: Thanks for the tip, pal! I tried Ex-Lax and it's great stuff!



JIM: What did I tell you! It's the only laxative we ever use in our family.

The action of Ex-Lax is thorough, yet gentle! No shock. No strain. No weakening after-effects. Just an easy, comfortable bowel movement that brings blessed relief. Try Ex-Lax next time you need a laxative. It's good for every member of the family.

10¢ and 25¢



suggestion that they stop fighting. They would fight on until that final wave of darkness came. But the problem was—how to fight?

How could they fight the nothingness that would exist when time and space were not?

All the knowledge stored within the integrator had been used, had been sifted down to the last impossible fact. To all questions, the integrator returned the same answer. I. D.—Insufficient Data.

All the knowledge known to one System was stored within it. From that bewildering maze of facts, it could not suggest a single way to save the System. Specialists who knew those miles of wire by heart, who knew every turn of every coil, every movement of every lever and every cog, were painfully bewildered.

"More facts!" they demanded. "Give us more information. Without facts and laws the integrator is helpless."

The co-ordinators were more than willing to give them facts. But each new bit of information took years of research. New laws were not found every day.

"Do I hear any further suggestion?" Dorn asked, without much hope.

There was no answer.

Jim sighed and sat down. He did not know the door had opened, that another person had entered the room. But then he felt the strange pulse of an alien mind. He looked up.

CHAPTER V

The Gesture Magnificent

HALAR of Halone stood at the door. Holding the thought helmet, he looked inquiringly at Jim.

"Come on," Jim waved him in. "If you have any ideas, let's have them."

The Halone came across the room, holding out a helmet. Jim grabbed it. Vaguely he remembered seeing Halar mysteriously busy around the Base during the two months that had passed. But he had had no time to waste with anyone.

As he slipped the helmet over his head, he felt the pulse of Halar's thought. Instantly he caught the meaning of it. He jerked the helmet away, leaped to his feet.

"We're a bunch of damned fools!" he shouted. "All this time we've been searching for every possible fact to file in the integrator. We were desperate because we didn't have enough information even to approach our problem. And Halar has been right here under our eyes—anxious to give us all the science of the Halones!"

It was the incredible truth. For two months, the far-reaching science of a race from a lost corner of the universe had been at their finger tips, and they hadn't realized it!

Shoving Halar ahead of him, Jim dashed out of the room, the four co-ordinators scrambling behind him.

The technicians needed only a short explanation to grasp the idea. For some unknown reason, Joseph Brent had kept them working on the construction of the thought helmet. Now they had a use for it that perhaps even he had not foreseen. Swiftly they connected the output of the helmet to the intake of the integrator.

The circle that stood around Halar was breathlessly silent. Lines of concentration deepened on the Halone's face. Over his multi-faceted eyes a soft film appeared.

In the silence of the room, Jim could hear the integrator begin its busy clicking. As the thought currents were translated into electric impulses, the integrator buzzed. Levers began to move, cogs began to turn. The clicking grew stronger as hidden relays came to life.

To all the knowledge gained by the scientists of the Solar System, Halar was adding the information known to the Halones. Much of it necessarily duplicated the already known facts. But then came soft buzzing sounds.

For new facts were being fed in, relationships unknown to solar science. Swiftly the relays clicked. Somewhere a coil took on a sudden loading. The humming grew, the relays hammered louder.

No one man could solve the problem

facing all men. No one race knew enough, or could know enough. Even the knowledge of three solar races was not enough. But, the knowledge of three solar races, added to the knowledge of the Halones—

Jim Dorn watched that alien creature who had fled across the void of space in his search for sanctuary. Halar had learned there was no escape. He had so informed his people. But he was a fighter too. As long as there was hope, Halar would do his part. As long as his heart lasted!

The two dwarfs watched, thinking of the millions of their kind back home on the red planet. Starm watched, his mind returning to the people under the cloud banks of Venus. Early stared. His cigarette burned his fingers, but he did not know it.

THE clicking relays slowed, went slower still. Minutes dragged out into hours. Then the relays clicked with a tired sigh and at last fell silent. Halar fumbled with the helmet. He would have fallen, but men caught his great bulk, hauled and dragged him away to rest.

The gap of a million light-years had been spanned! The integrator formerly held the accumulated knowledge of one System. To that vast knowledge had been added another, enormously greater than all three combined!

Like a madman, Jim Dorn drove his technicians. The four other co-ordinators rushed the mathematicians.

From the integrator, working now with the science of two Systems, poured a stream of equations. The mathematicians grabbed the papers, spread them on long tables, began to translate them. Slowly the picture came through, in maddeningly fragmentary bits. Here a theory fitted with a fact. Here an old theory did not coincide with a new fact. Here was a new fact that made a whole new world of investigation possible.

Jim Dorn did not know how much time was spent there in that room. He only knew that he was working in

bedlam, among dozens of sweating men. That despite their weariness he was driving them to work at an inhuman pace.

The whole force of Pluto Base was drawn up in relays. Somehow, someone remembered food. Gallons of hot coffee, fortified with whiskey, were also brought in. Men ate and drank while they worked. Rest was remote, sleep an impossibility.

But now they had facts and laws to work with. They bedeviled the mechanical integrator until it broke down. Sweating technicians hastily repaired it. It buzzed and hummed once more. The relays clicked protestingly. And the mathematicians labored over the equations until they were able to bring Jim Dorn the final, ultimate answer.

He looked at their equations, listened to their explanations. Very suddenly, he realized he was tired to death.

"This involves a dimensional shift," he said.

"That comes from the equations of the ultra-Lorenz-Fitzgerald flight of the Halones," they admitted. "Yes, a shift is involved."

"But it is not possible," he stated flatly. "You would save us by revolving the whole Solar System through a dimensional shift and into a new universe! It cannot be done!"

But these men were mathematicians, specialists, experts in their field. They insisted that the integrator said it could be done. The new equations showed how it could be done.

The planets themselves could not be shifted, for that was impossible. But certainly space ships could be so shifted. Space ships, of course, could be used to ferry passengers. Therefore—

Jim gaped at them. He looked from them to Chitor, and the brown dwarf nodded. Rudo nodded, and even Starm flicked his eyes, acquiescent. Early waved his cigarette in agreement.

"Hell," said Jim. "I'm not going to argue with you in your own field. You say it *can* be done. It's my job to

say it *will* be done."

Something that ought to have been a shout echoed through that room. It was in reality the raspy exultation of a deathly weary man. Other tired voices took it up. It grew into a chorus of faint cheers.

No one knew whether the problem had been solved. No one knew if the dimensional shift was possible. No one knew what would be found in whatever universe that might be found across the dimensions. No one even cared.

Their own universe was running down on them, preparing to kick all forms of life from its doorstep. This was their only hope of defeating the forces rising to destroy them. It was, in short, the last single chance that might guarantee *racial immortality*.

JIM DORN, a dwarf named Chitor, a second dwarf named Rudo, a Greenie who occasionally answered to the name of Starm, a bearded Earthman who never answered no matter what you called him, and Halar of the Halones, watched that first experimental ship quiver and shift in glimmering waves of moving light.

Its volunteer crew was starting out on the first voyage into the completely unknown. The ship rested on the ground just outside the hangar of Pluto Base. It quivered as they watched. And even as they watched, it was no longer there. Beyond the spot where it had stood, the fantastic landscape of barren Pluto leered at them.

Jim Dorn heard somebody whispering.

"She's—gone. . ."

He was surprised when faces turned blankly toward him. He was the one who had whispered.

Gone! Across the void of nothingness! Into a new universe, where the tides of time and space were still flowing outward? Or into nothingness, down the river of no return? No one knew. No one could guess, for the dimensions had never before been bridged.

But everyone knew that this was the last hope. Months had been spent in

building the engines of that ship, in combining the Gundstettor warped-space drive and the drive of the Halone ship.

Two sciences had blended, with results that could not yet be foretold. The equations? They had an answer that was pat enough. But there might be flaws in the equations. Human flesh and blood must dare to test for those flaws.

Human flesh and blood had built the ships that crossed Earth's seas in ages gone. Later, those same qualities had constructed the ladder of wings that led to the skies. Now fragile human bodies had to feel a road out of the universe where they could no longer exist.

Jim Dorn felt his heart pounding like the throb of a rocket engine. He stared through the bleak window, over the barren waste that was Pluto. He thought he was used to shocks. But—he suddenly realized that it was less than a year ago that he had first gazed at that scene.

Now he was an old man. His heart, like Joseph Brent's, was probably burned out.

It did not matter about the heart. The only thing that mattered— He was holding his breath again.

Out on that eternally frozen ground, a ship was slowly taking form. It was the ship that had reached across the gap between the universes. And it had returned! Unmistakably, it had returned!

That was all that mattered. . .

Without waiting for his orders, the hangar doors were swung open. Throbbing, the ship rolled in. Out of her locks the crew tumbled.

"Mr. Dorn!" the captain shouted. "We went through! There's a world over there—a sun, lots of suns, planets, everything—"

He did not know how he got back to the communications room. He did not know it was his voice that barked out the orders. But news was sent flooding out to the planets, news that set the hoping millions completely wild with joy.

Across the gap between the universes, were *worlds*!

Between the planets of the doomed Solar System, detailed plans for the construction of the Gundstetter-Halone warp drive were flowing. He could not see it. But he knew that on all the planets, workshops were springing to furious activity as the construction plans came through.

Jim Dorn walked to the window and looked out. Beside him stood his four companions.

Towering above them was Halar of the Halones, who had already radioed to his fleeing people just what had happened.

"When the last inhabitant of the last planet has been ferried over," Jim

Dorn ordered, "we will go. But not until then."

On the other side of the window, the cold of outer space leered at him. The inward-flowing tides of time and space, contracting throughout the universe, reached invisible, grasping, deadly fingers toward him.

Very gravely, he thumbed his nose at them. With equal gravity the four co-ordinators imitated his gesture. Halar did likewise. He didn't know what it meant, but these little creatures whom he had learned to love were doing it. So he did it.

Considering the fact that Halar had four hands, he did a impressive job.

COMING NEXT MONTH

THE SEVEN SLEEPERS

A Complete Carlyle-Quade Novel

By ARTHUR K. BARNES and HENRY KUTTNER

FEATURED IN THE SPECIAL SCIENTIFCTION NOVEL SECTION

o

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Designed for close, clean, easy shaving,

It's also time and money saving!

Now kind of edges on steel
hard enough to cut glass!

THIN
Gillette
BLADES

4 for 10¢

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Science Quiz

ARE you a perambulating five-foot shelf? Is there a filing-cabinet in your cranium? Here's a new collection of scientific brain-teasers and cosmic conundrums to test on your medulla oblongata. See if your cerebral cortex can answer these without referring to the current edition of the World Almanac or your encyclopedia. But if it's all Einstein to you, turn to page 121 for the correct answers, as compiled by our Brain Trust.

POSITIVE OR NEGATIVE?

Are you hot or are you cold? Students, don your thinking caps and tell the old professor whether he's right or wrong on the following statements. (Par for this course—15 correct.)

1. As a comet approaches the sun its nucleus increases in brightness and apparently shrinks in size.
2. All coal contains more or less moisture.
3. Snow reflects all visible wave lengths in the same proportion.
4. The form of the solar corona is the same for different eclipses.
5. All living matter is built up of colloidal materials.
6. The dynamo is perfectly reversible; that is, it may be used either as a generator or a motor.
7. The specific heat of elements are not related mathematically in any way with their atomic weights.
8. Plants grown in the dark contain little or no chlorophyll.
9. When colorless, water-clear, and flawless, diamonds are referred to as of the "first water."
10. Coal and coke are excellent conductors of heat.
11. When the volcano Krakatoa exploded in 1883, the fine ashes were carried around the world several times by the currents of the upper air.
12. A deficiency disease is any disease primarily due to a lack of a certain element, such as one of the vitamins.
13. Iron does not exhibit magnetic properties at high temperatures.
14. During the return of Halley's comet in 1910 the Earth passed through its tail and not the slightest effects could be noted either in diminution of sunlight or change in the chemical constitution of the atmosphere.
15. There is no adequate explanation for the solar corona at the present time.
16. If an electric circuit has appreciable inductance, Ohm's law in its simple form would not apply to it.
17. According to the relativity theory, when radiation quanta leave a massive source they are retarded by the gravitational attraction, and hence lose energy.
18. When a liquid has begun to boil steadily, it maintains a very nearly constant temperature until it has all boiled away, no matter how rapidly the heat is applied.
19. If the Earth were a perfect sphere, a degree of latitude would have the same linear length everywhere.
20. The distance of Sirius, which is a little over eight and a half light years, is being decreased by nine miles each second.

TAKE A LETTER

Here are ten incomplete scientific facts. Four suggestions are offered in each case as possible fill-ins for each statement, but in each case only one is correct. Can you pick the winners? It's as easy as A-B-C-D. (Par for this group—7 correct.)

1. The "Demon Star" is: (a) Rigel, (b) Antares, (c) Procyon, (d) Algol.
2. The difference between the equatorial and polar diameters of the Earth is: (a) 5 miles, (b) 13 miles, (c) 123 miles, (d) 197 miles.
3. The electrodes of the common dry cell are composed of: (a) zinc and carbon, (b) iron and zinc, (c) lead and copper, (d) iron and lead.
4. Permat's Principle is a law of: (a) geology, (b) optics, (c) chemistry, (d) biology.
5. The chief distinction between fogs and clouds is the arbitrary one of: (a) color, (b) origin, (c) position, (d) time of day.

6. The freezing point of a liquid is the temperature at which: (a) the solid and liquid forms are in equilibrium, (b) the liquid form is one-third and the solid form two-thirds, (c) the liquid form disappears.

7. The place where the sun crosses the plane of the Earth's equator from south to north is known as the: (a) autumnal equinox, (b) lunar eclipse, (c) vernal equinox, (d) solar eclipse.

8. The one particular in which all fungi are alike is: (a) size, (b) place of growth, (c) life-time period, (d) absence of chlorophyll.

9. You'd never detect X-rays by using the: (a) fluorescent effect, (b) photographic effect, (c) Hanstein effect, (d) ionizing effect.

10. The longest natural unit for measuring time is the: (a) century, (b) year, (c) month, (d) day.

TO THE COLORS

Here's a chance for all you red-blooded scientific bloodhounds to win some blue chips. Below, in black and white, are two columns that require proper matching. Each of the colors in the right-hand column has a mate in the left-hand column. Unless you're color-blind, you'll be able to link them together in true-blue style. (Par for this lap—13 correct.)

- | | | | |
|--|--|---|--|
| (1) Addison's disease
(2) Antares
(3) Beryllium
(4) Bile (human)
(5) Chlorine
(6) Chlorophyll
(7) Copper
(8) Iodine | () Black
() Blue
() Bluish-black
() Bluish-green
() Bronze
() Colorless
() Grayish-white
() Green | (9) Leucocyte
(10) Mercury Vapor Lamp
(11) Neon
(12) Obsidian
(13) Ozone
(14) Platinum
(15) Sodium (Fraunhofer lines) | () Greenish-yellow
() Golden-brown
() Red
() Silver-white
() White
() Yellow
() Yellowish-red |
|--|--|---|--|

SCIENCE IN BLOOM

Round four, and we say it with flowers. Each of the following terms, when the letters are arranged in their proper order, spell out a botanical expression relating to plants and their parts. Number 2's the—of all evil. (Par for this jaunt—8 correct.)

- | | | | | |
|-----------|-----------|-------------|---------------|----------------|
| 1. fale | 4. lipsit | 7. molehp | 10. orezhim | 13. sinemooocu |
| 2. toro | 5. matesn | 8. atomsat | 11. tondoleyc | 14. maycarehpn |
| 3. leonlp | 6. rolefw | 9. burmmaci | 12. pollyesmh | 15. neonratmgi |

AIR RAID

The last mile of this mental merry-go-round, and here's where you come up for oxygen. The following passage pertains to oxidation and its properties. See how many of the blanks you can fill in—or is your mind a blank? (Par for this circuit—7 correct.)

Originally oxidation referred to the reaction of a substance with _____ gas. The elucidation by _____ of the burning of substances with oxygen marks the beginning of chemistry as a science. When carbon burns in excess of oxygen or air, _____ is formed with the accompanying liberation of a definite amount of _____.

When hydrogen and oxygen of air are burned or subjugated to an electric spark, _____ is formed with the accompanying liberation of a definite amount of _____.

Oxidation is a reciprocal process. _____ is the oxidizing agent; the substance reacting with the oxygen is called the _____ agent.

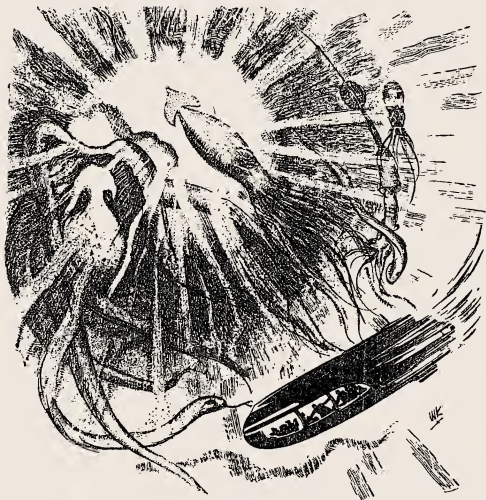
WHAT'S YOUR SCIENCE I.Q.?

After you've completed the SCIENCE QUIZ and checked your results with the correct answers, get a slide-rule and calculate your score. Here's how you rate:

- 60-67—Superman.
 49-59—Mental Marvel.
 39-48—B.B. (Bachelor of Bookworms).

- 30-38—Try Crossword Puzzles.
 15-29—Stick to Fiction.
 0-14—Absolute Zero.

A Pair of Intrepid Scientists Brave the Flames of the Sun—and
Fight Fire With Fire!



There were dozens of the gaseous creatures between the ship and the sun

SUNWARD

By STANTON A. COBLENTZ

Author of "The Man from Xenon," "The Sunken World," etc.

THE blazing yellow-white disk, wider than a dozen moons, burnt below the space ship with a brilliance that would have blinded an eagle's eyes. Dotting the central zones of the great sphere, which was mottled and corrugated as though from some pock-marking disease, scattered black spots stood out amid the terrible in-

candescence; while leaping streamers of fire, hundreds of thousands of miles long, rose from the surface and twisted and bent like writhing serpents of light.

Through a thick quartz slit chemically treated to deaden the glare, two men stood looking out at the flaming globe. Both wore heavy, colored gog-

gles. Both were naked except for loin clothes, for, despite the fact that refrigerating system was working close to capacity, the mercury had risen to 102.

"Well, Clint, what do you say? Shall we call it quits?" inquired Art Powell, the elder of the pair, a long, lean, grizzled individual with a furrowed egg-shaped head.

Clinton Claybrook, a short, energetic-looking man with eager black eyes, wheeled about sharply.

"We can't give up now, just when things are getting interesting," he said, his eyes fixed on a gauge where a little arrow, marked "Miles per second," pointed toward the number 298.

"We're not giving up, Clint," replied Powell, "but I don't want to wait till things get *too* interesting. Can't you be content with what we've done? We're nearer to the sun right now than any man ever was before."

"Still more than twenty-three million miles," mumbled Claybrook, "Why, we're capable of another eight million!"

"I believe in leaving a safe margin," Powell objected. "True our insulators are capable, according to my calculations, of resisting the sun's rays at a distance of fifteen million miles. But we have another factor to figure on. How about the solar attraction?"

"Oh, bringing up that old bogey again?" scoffed the younger man, as he leaned back against a lever marked *Inter-atomic Propeller Blades*. "How tremendous the sun's pull is—how, unless we watch out, we'll plunge straight into the furnace?"

"Either that, or be held as a satellite and revolve about the sun till it turns black in the face!" said Powell grimly. "We're playing with cosmic forces. Unless we can, more than double our speed and clear old Sol by a wide angle, fifteen million miles will see the end of us!"

"Well, that'll be better than a coward's return," gibed Claybrook. "Have you lost your nerve? Buck up, old fellow! You can't afford to get scary, out here seventy million miles from the good old earth!"

POWELL glared at his comrade. Such a flame of fury filled his steady gray eyes that he seemed like an animal contemplating a spring. But he bit his lip, and, after a minute, replied with assumed calm.

"Very well, Clint, I'm yellow. But I'll take up your gauntlet. We'll make fifteen million miles the limit for the sake of scientific research, but we're fools to go on. We've got enough data now to keep us busy for years. Don't blame me if your eyes break down under the glare. Don't blame me—well, if something goes wrong, and we don't get back."

"Sure, I won't blame you if we're toasted to cinders!" derided Claybrook as he gave a rapid twist to a dial. And, muttering "More bogies!" he turned from his companion. Powell, gloomily rubbing his bearded chin, reflected that he could not have done worse in his choice of a traveling partner.

It was no more than a year since he had proclaimed a flight close to the sun to be possible, startling the world by his discovery of granolite, a silicon-carbon compound which could be raised to two thousand or twenty-five hundred degrees of heat on the surface while not mounting to excessive temperatures at a depth of a few inches.

And only six months had passed since he had selected enthusiastic little Clint Claybrook, out of all the hundreds of applicants, to join him in the specially constructed space ship for a trip close to the sun to study sunspots. Not ninety days ago, on December 4, 1976, the two of them had set off amid universal acclaim on the first "Around the Sun" flight in history for the purpose of meteorological research.

But those ninety days, though they represented the climax of all that Powell had been planning and hoping for during twenty-seven plodding years in a chemical research laboratory, had been among the most bitter in his life. And this was because of the clash in the personalities of the two men. Claybrook, naturally active and volatile, and chafing under the

forced inaction of the space ship, unconsciously sought revenge by taunting his partner; all the more so since, not understanding the slow reasoned methods of the older man, he mistook the latter's caution for a great lack of spirit.

If only Clint had gone half-way to meet him! Powell brooded, as he stared through the slim slit of glass toward the appalling ball of fire which they were rapidly approaching. But there was no resisting the ironic curling of those thin lips, the mocking sparkle of those black eyes.

And now, through Clint's obstinacy, they were bent on an adventure which, Powell felt, was terribly unwise. He became increasingly uneasy as the dazzlingly bright sphere beneath them grew wider and its rays beat with more fearful intensity upon the hundred-foot shell of the space ship.

THE sun grew so large that it seemed to fill a quarter of the heavens beneath them. Its brilliance was so dreadful that the men could gaze at it only for a few minutes at a time, and then through the darkest of dark glasses and at the cost of continual pains in their eye-balls.

The solar prominences, those frightfully brilliant masses of incandescent gas that shot out from the central body, seemed to reach up toward the space ship in long serpentine, as though to seize and devour it while still it whirled on its way through the glaring abysses.

The aim of the travelers was to move around the sun at the fifteen-million-mile distance, curving back in a long parabola before beginning their return flight to the earth. In order to accomplish this end without falling a prey to the sun's attraction, they would have to move at a speed well over six hundred and fifty miles a second. But this they were able to do, thanks to their inter-atomic engines, which could produce almost any required amount of energy through the dissociation of a gram or two of lead per day.

Meantime the temperature within the car had risen to 110. Nearly

prostrated, both men passed most of their time sprawled full-length on the floor while the torrid wind from the electric fans seemed, if anything, only to add to their discomforts.

"Humph! Call this hot?" Claybrook tried to argue away the cruel reality. "Why, I remember once in Death Valley we'd have been thankful to have it so cool!"

"The heat be damned!" muttered Powell, as he crawled an inch nearer to a big fan. "That isn't what's got me worried."

"Still racking your brains over the gravitational danger?" sneered Claybrook. "Well, here we are, fifteen million miles from the sun! Nothing so terrible's happened yet, has it?"

"Not yet," admitted Powell. "But we're not back, either—not by a hundred million miles!"

"Guess you'll be disappointed if we don't die en route." Claybrook laughed shortly as, for the hundredth time that day, he wiped his perspiring limbs.

Powell, rising, sidled over to one of the quarter-inch light slits, and stared out intently for a few seconds. Then, the tears dripping from his strained and bloodshot eyes, he mumbled uneasily: "There's something there I—well, something I just can't make out!"

"Thought that was coming!" growled Claybrook, as he arose and went over to the light slit.

"Holy Christopher!" he whistled, beneath his breath, as he turned slowly back toward his partner. "I guess something's gone wrong with our eyes!"

"It's not our eyes that are wrong," said Powell grimly. "Didn't you notice?"

"You mean, those reddish clouds between the sun and us?"

"Exactly. What do you make of them?"

Claybrook hesitated. For the first time, a shadow seemed to dim the natural confidence in his snapping black eyes.

"They must be masses of overheated gas," he explained, with a shrug.

Powell seized a pair of binoculars and returned again to the slit.

Again he stared until his flooded eyes could no longer bear the strain. Dimming the sun's fierce radiance, at an indeterminate distance, great nebulous masses had formed, sultry red against the intense yellow-white luminosity. That they were no more than eruptions of hot gas seemed the natural explanation, yet Powell was not sure.

For one thing, they seemed to be gliding upward with an almost preternatural steadiness of movement—not with the fitful, gaseous swirling that might have been expected. And, for another thing, they had a definite outline which did not bring to mind any cloud Powell had ever seen. Besides, how could there be clouds here, far beyond the upper limits of the solar atmosphere?

Was it true, or was it but his imagination, that the vapors had consistent shapes, which billowed in and out with regular pulsations, as from the beating of a heart? Was it true that some were great snakelike streamers of red mist which, looping and twisting in a thousand directions, retained their serpentine forms? Was it true that others were like Chinese dragons with a dozen tails, or like three-headed crocodiles, or like comets pointing toward the sun? Was it true, also, that these figures, while often touching, were never seen to merge, as they would inevitably have done had they been ordinary conglomerations of gas?

"By heaven, Clint," exclaimed Powell, after forcing his watering eyes to a third glimpse, "they're changing colors! Some of them are turning green! Some golden-yellow! And there's one there that's purple as a fig!"

A cynical smile curled Claybrook's lips.

"Listen here, Art," he advised, "better lie down and take it easy a while. If you don't watch out, this heat'll be getting to your brain pretty soon."

Claybrook reached for the binoculars, and was again at the slit. A muttered exclamation came from his lips. And when, after a few seconds, he

turned back toward his partner, his mouth was gaping wide, and the self-assured expression of his dark eyes had given way to a look of wonderment.

"Jumping Jehosaphat!" he ejaculated. "Guess I've gone screwy with the heat, too! Looks like the two of us are both about as cracked as any bugs they ever locked up in an asylum."

A TENSE silence followed. Then Claybrook, mopping his brow, went on.

"I guess it's delirium tremens in an advanced form, but you can beat me into a jelly, Art, if I didn't see all sorts of bright lights flashing out from those blasted things—emerald green, ruby red, bright white, and chrome-yellow."

"Coming and going, just like fire-fly sparks," Powell affirmed.

"Or like electric bulbs turned on and off. What can they be?"

"I have my suspicions," Powell declared, wrinkling up his features as he once more turned toward the slit.

His next words were not such as to reassure his companion. "You can damn me for an everlasting jackass, Clint, but they're coming faster and faster. I'll swear they're moving a thousand miles a second. They seem to be forming into a circle, just as if they want to surround us. Either I'm dreaming, or they're like an army deploying!"

Half an hour later, the men were taking turns in staring out of the window slit for dumbfounded seconds, regardless of the strain on their overtaxed eyes. The faces of both registered bewilderment, anxiety, even terror. They had ceased to gibe at one another, and all their speech was in broken ejaculations.

"Look! They're ten times closer! Say, each of them is as big as a mountain! Big as a country!"

The fact was that the shapes had grown to prodigious proportions. Each seemed large enough to envelop the space ship as a fish-net engulfs a sardine. What was worse, they had risen to a height equal with that of the

car, surrounding it in a circle which narrowed rapidly as they drew near.

There were dozens of the gaseous creatures, but the distances between them were almost uniform, and they moved as if under intelligent guidance. Their shapes were many and grotesque; some seemed like gigantic octopuses with transparent, misty limbs, some were snail-shaped, some vermiform, and some resembled huge jellyfishes reaching into space with twining vapory tentacles.

"They're like living things," Powell at last suggested incredulously.

"Maybe," muttered Claybrook. "Imagine living things—out here in space! Next thing, Art, you'll be believing in fairies!"

"That's right, Clint, go on, mock—do nothing but mock! That's because you haven't any imagination. Is it so damned much out of the question that living things with a different chemistry could exist here in space? Why, they might be made of vapors—heated maybe to thousands of degrees. It's only a fool with an inturning mind who thinks creatures all over the universe must comply with earth conditions. These gas animals, or whatever they are, may be just as intelligent in their own way as we ourselves!"

"Maybe a lot more intelligent, Art, than you are just now!" sneered Claybrook.

POWELL glared at his companion and, turned back to the slit in the wall. "Well, anyhow, they're certainly closing in!" he mumbled, half to himself.

The strange figures, wavering and fluttering eerily, glimmering and sparkling with every color from dazzling white and blue to hazy red, had drawn together in a solid circle which seemed, literally, not much more than a stone's throw from the car. On at least a dozen of them, the observer detected blinking pairs of lights which his fevered mind identified as eyes.

Now, from the largest of them all—a form shaped like a monstrous crimson spider, except that its legs were more than a dozen in number—there

burst a sudden pyramidal column of green light, which extended to the space ship and beyond, and seemed to engulf it. In an instant, it vanished, but even through the thick walls of the car its effects were evident.

"What's that?" exclaimed Claybrook, distinctly startled.

From outside, a low, ominous crackling came to their ears. At the same time, a wave of heat—sudden and more intense than anything they had yet felt—swept over them.

It was a minute before Powell thought to look at the thermometer.

"Look at this, Clint!" he burst out. "In spite of our granolite insulation and refrigeration it's heating up rapidly."

Claybrook turned to the thermometer, and could not hold back an exclamation of surprise.

"A hundred and sixteen!" he groaned, sagging down to the floor. "Not far from the limit of human endurance!"

Once more Claybrook turned his eyes to the observation slit. He saw a shaft of violet light shoot out from one of the figures which, looming portentously near, was a huge slug-shaped cloud of deep-yellow fire. Again there was that low crackling sound, and another wave of heat enveloped the travelers. With haggard eyes he looked at the thermometer.

"A hundred and nineteen!"

At the same time, Powell made a still more sinister discovery.

"The observation port!" he choked out as he staggered over to the slit. It—it's melting! The quartz!"

It was true. There was a blur at the farther end of the quartz slit, whose very substance was being liquified by the intense heat.

In silence the two men stared at each other. No need to be told what this implied! Quartz melts only at a temperature of about thirty-one hundred and ten degrees, Fahrenheit! Evidently the weird figures outside were attacking them with furnace blasts that even the insulated envelope of their car could not withstand—furnace blasts that would shrivel them to ashes.

Grabbing the controls, Powell changed the course of the ship as much as possible to draw away from the sun.

Peering through an emergency slit, made of a specially treated semi-transparent granolite, the men saw the enemy falling back. The temperature in the space-car went down a degree or two. But the retreat was only temporary. Now began the most peculiar and, in some ways, the most frightening event of all.

THE great colored figures split up into three groups, each of which swung around to a different side of the space ship. And each group assumed a triangular formation, like that of wild geese in flight. It seemed that all obeyed their own leader, of which one was the crimson spider-shaped form, while the other two were flame-hued apparitions with the ever-shifting contours of gigantic amoebas.

"Well, Clint, maybe you'll still say they're not living!" flung out Powell, as with a sickly sensation he gazed out at the triangular formations.

Claybrook's lips opened, and closed again without a word. But the scepticism in his eyes had given place to a look of childish wonder.

"They're not only living—they're living devils!" groaned Powell. "Look at that, Clint!"

From one of the groups, three blue lights flashed in rapid, rhythmical succession. Almost immediately, the second party replied with three yellow lights, and the third responded with three green lights.

"God, a regular signal system!" whispered Claybrook, as a wide, radiant streamer shot out from one of the groups and quickly enveloped the space ship.

"Couldn't be chance," he ruminated, gloomily. "No, it couldn't be chance, how they keep up with us, just at our speed, though we're moving fast enough to go round the earth in less than a minute."

Pennants of light had now converged on the space ship from the two other groups, and from all sides the low ominous crackling could be heard.

At the same time, the temperature was again rising. The two men, ready to sink beneath the oven heat, saw the mercury mount to 120, to 121, to 122!

"We're being baked alive!" groaned Claybrook.

"It's a concerted attack, Clint! What can we do! Heaven itself couldn't help us now! We're swinging around the sun at top speed."

"One hundred and—twenty-three!" mumbled Claybrook, a minute later, as he collapsed to the floor, gasping. "I—I'm all on fire!"

Powell, feeling as if a flame had enveloped his limbs, clasped one hand to his throbbing head, while with the other he reached for the dial of the radio.

"I—I—we've got one last trick Clint," he stammered, hardly able to control his crackling tongue. "Maybe it will work. At least we've got to—got to notify them on earth so they won't—won't send any one else to—to roast here."

The crackling sound had grown louder. The temperature was still rising, though neither man had the courage to glance again at the thermometer. Had either peered through the slit, he would have seen that the three great groups, shooting out their long shafts of light, had drawn so near that they sometimes touched the space ship.

POWELL turned the switch connecting with the radio batteries, put his mouth to the microphone. With swimming head, like a man who speaks in a dream, had gasped out his message.

"Space ship A-Y . . . Powell speaking . . . Bad news. Bad news. Attacked by space monsters . . . Burning to death . . . It's a living furnace. For God's sake, don't send any one else . . . I can't speak any more—throat dry as ashes. It's the end—"

Reeling away from the radio, though the batteries were still working, Powell fell full-length to the floor. His panting lungs seemed to be burning within him. The fever in his limbs and the pain in his head were such that he wished only for speedy

deliverance. Never had he known how badly he could crave a breath of cool air—just a single life-giving breath!

It seemed that a great period went past, while he broiled and shrivelled. He had never thought that dying could take so long. Would it not soon be over? Would he never be out of his misery?

He could not say just when it was that, with a reviving clarity of mind, he realized that the crackling had ceased, and that the air was not quite so hot as before. He opened his eyes dully and looked around. Claybrook was still prostrated on the floor.

Then, with painful difficulty, Powell struggled to his feet. He stared at the thermometer, could scarcely believe his own senses. It was back to 115!

The next instant he was peering out through the window slit. The terrible triangular attacking formations were no longer to be seen! It was a minute before he observed, far in the rear some vague patches of reddish gas, which, when examined through a hand telescope, proved to be formless, motionless, and without sign of life!

"Killed deadier than a doornail!" he muttered thickly to himself. "Thank heaven, it worked."

Claybrook recovered sufficiently to sit up and sip some water. He stared at his companion incredulously.

"What saved us?" he demanded weakly.

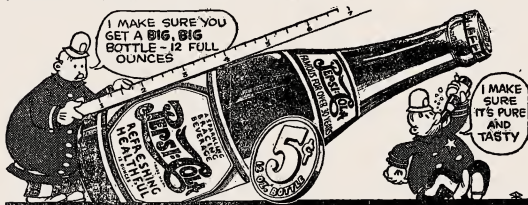
"The radio," Powell explained. "Don't you see, Clint, those beings out in space were geared to certain wave-

lengths, of light, and electricity, and the cosmic rays. But other wave-lengths they can't endure at all, any more than the human ear can stand certain wave-lengths of sound. The wrong waves just cut through them, ripping them to shreds—worse than powerful radium emanations on the human system. They had never encountered anything like radio waves before. As soon as I started those currents going, their vital elements were simply split up. That's why you and I are alive now, Clint!"

CLAYBROOK stared at his companion long and contemplatively. Then, rising with an effort, he flung out his right hand. "Put it there, Art!" he said. "I've made a damned jackass of myself. You were right every time, and I was wrong. I'll try to make up for it from now on, and be a better assistant to you. We shouldn't ever have come so close to the sun as I suggested."

"Oh, I don't know," said Powell, as he returned Claybrook's clasp. Then, pointing through the quartz slit toward the slowly retreating solar flames, he added, "After all, if it hadn't been for you, Clint, we wouldn't have known that a strange life could exist out here in space. And that, I think was worth going through fire to find out."

"I'll be damned if I thought so a while back," muttered Claybrook, as, taking another sip of water, he began mentally to calculate how long it would be before they were back on earth.



THE GIFTS OF URS

By DON TRACY

Author of "Stretch Turn," "How Sleeps the Beast," etc.



Tlay hurled the magic stick into the fire

THE whole pack laughed when Urs took Gella for his mate. Trust Urs, everybody agreed, to do the wrong thing—even when it came to taking a mate to share his cave.

For Gella was all wrong. She was a small, skinny thing with tiny feet. Her hands and legs were like the reeds that grew at the edge of the Big Marsh. She was weak, too, with none of the fine bulging muscles that made the other females beautiful. Gella was a runt.

Besides, she never had been quite right in the head.

That was proved the time all the

**When a Stranger Brings
Weird Magic to the Tribe of
Bar It Warns of Grim Destiny!**

females of the pack were out gathering clams. The white, smooth-skinned girl discarded her brief kilt of wolfhide. For awhile she stood motionless at the edge of the water. As the other females watched, grunting to each other, they saw Gella half-run, half-walk up and down the sand. Waving her arms sensuously, she arched her slender body against the

wind that rushed in over the combers pounding the beach.

The other females clucked to each other, indignant of course, but more amused. Gella had broken the Law of Bar by being unclad. Bar had decreed that all, male or female, must cover themselves after their tenth Big Whiteness.

For breaking Bar's Law, Gella could have been used as lion bait. Those who broke the Law were staked out in a likely spot, securely bound with elk sinews, their arms and legs mashed by heavy stones. The scent of hot blood, combined with the cries of the condemned men, brought sleek, tawny mountain lions to ambush. As the lions tried to drag the bait loose, the men of the pack rushed in with their big stones. Almost always they made their kill.

The females who had seen Gella on the beach that day regarded her as one with a weak brain. Otherwise the girl would have been killed in this manner. It was generally recognized that the slight, white-skinned girl was a freak. The other females, feeling sorry for her, kept her strange conduct secret.

That incident occurred several moons before Urs joined the pack. He came up to the Fire Circle while the pack was feasting after a big hunt. Bar himself ordered the stranger to be fed. He had seen that the newcomer was trembling from hunger.

"I am Urs," the stranger said. "I have come from a place many moons away. This is the first meat I have tasted in a long time."

SILENTLY they watched him as he squatted among the men and tore at the elk haunch that was handed him. It was obvious that Urs was different from any man Bar's pack had ever seen. The men of Bar were swarthy, with splendid wide nostrils and matted chests. But Urs was slightly built, virtually hairless, except for the thick crop of curly bronze hair that adorned his head.

His forehead, too, was different. The brows of Bar's pack slanted back sharply from their thick, black orbital

ridges. Urs' forehead, though, was almost straight up and down, much too high for handsomeness, as adjudged by the standards of Bar's pack. His ears were peaked, hugging close to the sides of his head.

Yes, he was an ugly person. The females of the pack sat behind the circle of men around the fire. They chattered among themselves, telling each other how glad they were that their men were handsome, thick-featured creatures, instead of peaked, pale beings such as this stranger.

All the females agreed on that, except one. That was Gella. She sat apart from the other females and looked across the fire at the stranger. Her lips—she had an ugly, thin-lipped, small mouth—curved upward at the corners. She did not know why her mouth moved that way. She hid her face in her hands, recognizing this grimace as added proof that she was a fool.

"Where do you come from?" Bar asked the stranger, Urs.

The man pointed a long hand toward the mountains, where the Great Red God rose into the sky, chasing the blackness.

"From a place that once was there," Urs replied. "It is a strange place. It is filled with big stones and pieces of something stronger than stone."

He put aside the haunch he was tearing at and fumbled in the pouch slung over one shoulder. He pulled forth a long, narrow stick that was coated with something red and flaky.

"There were many of these in the place I come from," he said. He handed the long object to Bar. "This is the only one of these things I took when I had to leave that place."

Bar looked at the thing the stranger handed him. He smelled it, tasted it and then handed it back.

"It is a strange thing," he said gravely. "It is not good to eat. What is it?"

Urs shrugged.

"No one knows," he admitted. "When I first found this thing, some of the stuff that makes fire was attached to it. But I used that to keep me warm while I walked across the

hills to this place. I used a stone to smash loose the stuff that burns from this thing I have shown you."

"Where is your pack?" Bar asked.

THE stranger looked down at the long, flake-crusted stick he held in his lap.

"I have no pack," he said. "There was a big pack where I lived. It had a chief named Tur. Then, one time I was hunting, there came a great wind, and much water fell from above. I stayed in a cave while the wind cried at me and the water covered everything.

"When the wind was through crying and the water stopped falling, I went back to my pack. Where my people had been, there was only water now. Only a few dead ones floated in the water. I stayed there until I knew no one was left who was not dead. Then I began walking toward here. Let me stay with you."

Bar looked at the other men around the Fire Circle.

"No!" said Tlay, the red-haired. Across the circle, beyond the row of men, Gella held her breath. "We have had a good hunt and we have meat now. But when the Great Whiteness comes, we will all be hungry again. Then, when our bellies shrivel, we will have this stranger to eat up what little we have. I say he must die!"

Urs' face seemed unmoved by this threat of doom. Bar looked at the stranger doubtfully. Tlay was Bar's mightiest hunter and the strongest man in the pack. But the chief turned toward a white-haired man at his other side. This was Grag, the wise one.

"Must he die?" Bar asked Grag.

Grag pursed his lips as he shook his head.

"We have lost many men, O Bar," he said, "by the lion, the swamp and the serpent. Others of us grow old and must soon be dead. Therefore, why should we kill a man who might make us stronger?"

"Stronger!" Tlay scoffed. "This weakling? I could break him with my hands. I would not even have to use a stone."

Bar hesitated. Urs got to his feet, holding up one open palm.

"Let me stay with you," he pleaded. "I am not as strong as you, but I will not be a burden. And I bring a gift to Bar, your chief."

He bent and picked up the long stick that was harder than stone. He held it out in both hands toward Bar.

"My pack," he said, "would let anyone stay who offered it a gift. That was Tur's Law, and Bar's Law can be no less wise. Take my gift, O Bar, and let me serve this pack. Let me take a mate from your females and live with you. And you, O Bar, will possess something no other chief owns—this thing that is harder than stone."

Bar eyed the long, narrow stick covetously. His Law, like Tur's, said that acceptance of a gift meant acceptance of the giver as a member of the pack. Bar was reluctant to antagonize Tlay. But the gift that was offered was too fine to be rejected. By taking this strange stick—whatever it was—he would have something no other chief owned, neither Des, nor Alb, nor the powerful Loy, whose pack lived in the swamp, naked and without fire, eating raw fish and serpents.

BAR put forth a hand and took the long, narrow stick from Urs. There was a hiss of suppressed excitement around the Fire Circle. In the shadows, unseen by the others, the corners of Gella's mouth curved higher than ever. She was happy, though she did not know why she should be. She was glad that the stranger, Urs, was going to stay with the pack and choose a mate from among the females of Bar.

Tlay scowled and turned his face away. Everyone knew that Tlay hated Bar. Tlay would certainly make himself chief after Bar was dead. The whole pack dreaded that day, for Tlay was hard and cruel. Some day he would kill Bar. Then the pack would live in misery. Tlay would surely take the mates from the other men and smash those who protested with the big stones he could wield so easily.

Urs bowed his head as Bar took the gift.

"When will you choose your mate?" the chief asked.

Urs shrugged, but his eyes turned from the squat women.

"I have not seen the females of Bar under the light of the Great Red God," he explained. "I have not talked with them. I have not provided myself with a bearskin on which to sleep. I have not even a cave to keep off me the water which falls from the skies. When I have these things, I will choose a mate, O Bar."

Bar nodded, "Our females," he said proudly, "are the most beautiful that live. Never could you have seen such females in the land from which you come, O Urs."

Urs glanced about him and saw the swarthy, heavy-featured women who sat behind the men. The females who had found their mates he recognized instantly, by the sliver of bone which pierced their right ears. The unmated females turned their faces aside, hoping this odd, thin stranger would pass them by. Then he saw Gella, her white face turned toward him, her eyes open wide and her mouth curved. He gazed at Gella for a long time before he looked back at Bar.

"What you say is true," he told the chief. "Your females are beautiful. I will be happy with the mate I choose."

That was what happened the first time Urs sat at the Fire Circle.

For a long time he worked hard at hunting for himself a thick bearskin and widening the cave he found on the outskirts of the pack's clearing. While he worked, the pack laughed at him—all but Gella.

Urs did things the wrong way. Instead of smashing his game with big stones, he used nooses, fashioned from elk sinews, and dug pitfalls to trap his larger animals. Yes, he got game, but the pack agreed that it was a weak, womanly way to hunt. It was not a sight to be admired, such as Tlay's hunting. Once Tlay wrested a huge bear to the very death. Though the monster clawed him down the face and one side, still he strangled it until it

stopped moving. Even those who hated Tlay had to admire his hunting. Tlay was ruthless and cruel, but he was wonderfully strong. And Urs was weaker than the weakest man of the pack.

AFTER the moon had twice grown fat and then thin, Urs approached Bar and asked for a mate.

"Whom have you chosen?" Bar asked.

"Gella."

"Gella!" Bar cried, aghast.

Yet Urs nodded, refusing to be shamed.

"Yes," he said. "When I am near her, it is as though I am given much meat after a long fast. But when I touch her hand, I hunger though I have just eaten. When she speaks, it is like gentle water falling from the skies after a long thirst. I have asked her to be my mate and she has said yes."

Bar frowned, stroking his shaggy beard with a gnarled hand.

"But we have many beautiful females," he objected. "Why must you choose Gella? Why not a strong female with big shoulders and wide hips? Do you not want to father a pack of your own?"

Urs shrugged in his characteristic manner.

"These are things no man understands," he said uneasily. "As no one knows what is the gift I gave you, O Bar, so no one knows why a man must choose one female for a mate and not another."

Urs' mention of the gift he had given Bar removed all the chief's arguments. That long, narrow, red-flaked object held the place of honor in Bar's cave. Des came to see it, and Loy, and they were impressed. For Loy, though he was little more than an animal, had heard about these long, narrow sticks that were harder than stone. Stories had been handed down from generation to generation within Loy's pack, and they said the strange sticks were powerful magic.

Loy examined Urs' gift to Bar carefully. When he looked up from his inspection, Bar noticed a new look of

respect in the close-set eyes of the swamp chief. Loy, Bar thought, would wage no more raids on the men of Bar when they hunted near the swamp.

"If that is your wish," Bar told Urs, "you shall have your way. Take her for your mate."

And the pack laughed. Trust Urs, the weakling who stayed with the pack only because he had given Bar a fine gift, to choose the weak, ugly Gella for his mate! The pack laughed, and the loudest laugh was Tlay's.

GELLA moved into Urs' cave. Most of the time, then, her thin mouth was curved high at the corners. The couple shocked the other members of the pack. When they walked together, they went with their hands clasped, and Urs never beat Gella, as a good mate should. And—until Bar of course put a stop to it—Urs even took Gella out hunting with him!

Tlay found the couple together one time, lying in the deep grass, watching a snare and whispering. Tlay went to Bar about that, and Urs was summoned before the chief.

"Your gift," said Bar, "has made you one of this pack. But such things cannot happen again. You hunt alone, or with the other men. Gella stays in her cave, as the other females do."

Urs bowed before the chief and promised that Gella would hunt with him no more.

"This man," Tlay stormed, "has broken your Law, O Bar! For all who break your Law there must be death. This man must die!"

Bar shook his head.

"No," he replied sternly. "Urs is a stranger to this pack. He did not know the Law. Now that he knows, he will hunt no more with his mate."

Tlay turned aside, muttering. His small, deep eyes burned with hatred for Bar and Urs.

The Big Whiteness came and went. When the last dry, white stuff became water on the ground, Gella came out of her cave with Urs. She held in her arms a skinny pale cub. They took the baby boy to Bar, and the chief named it Clee.

When Clee passed his third Big Whiteness there came what all had dreaded. Bar said the pack must learn how Urs hunted, for the weak stranger brought more meat than even Tlay. The strong strong man flew into a rage. With a huge stone, he crushed Bar's skull. Then the pack waited in fear for Tlay to challenge those who thought he should not be chief.

Tlay wasted no time. Bar's body scarcely was cold before Tlay summoned the men to the Fire Circle and told them that he was chief. They bowed their heads, fearing his great shoulders and enormous hands.

"And he," said Tlay, pointing to Urs, "must die. He and his mate, Gella, and the cub, Clee. They all must die. I say so, Tlay, your mighty chief."

THE men kept their eyes on the ground, lest Tlay see in them the loathing they bore for him. But Urs sprang up. There was no fear in his eyes, nor loathing, only the strange look the pack had seen in the eyes of the fox.

"No!" he cried. "The old chief, Bar, accepted my gift and took me into the pack. You cannot kill me and my mate and our child, for Bar accepted my gift. Every chief would turn his face from you, Tlay. You cannot kill the mate and cub of one whose gift was taken by a chief. Des and Alb and Loy would spit upon you."

There came a subdued rumble of agreement from the other men.

"No chief," stated Grag, the wise one, "ever has killed one who has been taken into the pack after his gift was accepted."

Tlay hesitated, his brows frighteningly drawn down over his small eyes. Beyond the circle of men, Gella clutched Clee to her, her heart pounding.

"If there is no gift," Tlay said, slowly, "there is no pledge. If the gift is destroyed, the pledge is destroyed with it."

He glared at Urs, then turned and stalked into Bar's cave. He emerged,

bearing the long, narrow, red-flaked object in his hands. He walked to the fire and held the gift of Urs over the flames.

"See!" he shouted triumphantly. "I destroy the gift of Urs. When it burns, Urs loses his pledge and he dies. He and his mate and his young cub!"

He cast the gift of Urs into the fire and stepped back. His great arms folded on his chest, he leered into the flames. There fell a dread silence around the Fire Circle. Grag gnawed his lips.

"See!" Tlay cried again. "See how Tlay deals with those he hates. See—"

It was the last word he ever spoke. From within the fire roared the crashing sound of thunder. The long, narrow stick that was harder than stone leaped convulsively. Ashes sprayed over the men sitting closest to the fire. But they heard the dull *smack* of something that struck Tlay. It was like the sound of Urs' arrows when they hit their game squarely.

Tlay leaped back, clutched his big hands to his hairy stomach. He stared down at his middle. His eyes were wide with surprise. Dazedly he lifted a hand and watched the blood drip from his fingers. He took his hands away from his stomach and looked at the small, round hole there. Blood reddened the black hair that matted his powerful middle.

Then Tlay took another backward step. His cruel eyes grew vague as his body sagged. Abruptly he pitched forward and fell. His proud face lay humbly in the rubbish around the fire, nor did he try to raise it away.

The men in the Fire Circle gazed at Tlay. Then bewilderedly, their round stares moved toward Urs. The stranger gaped long at the felled man who had wanted to kill him, and there was a baffled look in his eyes. It was Grag who spoke first.

"We know that Urs was sent to us to be our chief, instead of Tlay," he declared solemnly. "The gift Urs gave Bar, the same gift that Tlay tried to destroy, has killed Tlay. It is truly a magic thing. Therefore Urs, who commanded the thing to kill Tlay, is

a magic man. So I say that Urs should be our new chief."

NOW there was no frightened rumble from the men around the fire. They shouted happy assent.

Urs walked cautiously toward the fire. He took a branch and pulled from the flames the long, narrow stick he had given Bar. The stick was black now. For, when the branch dragged it over the hot coals, the red flames were scraped away.

The stick burned Urs' hand when he picked it up. But he kept his anxious grasp firm, turning his awed face to Grag.

"You have made me your chief," he said, quietly. "I will try to be a just chief, like Bar. Grag, the wise one, will tell me what to do when I am in doubt. Gella, my mate, will keep me from doing anything unjust or cruel."

Over the shoulders of the men, he looked at Gella and held out his hand. She arose and walked to his side, carrying Clee on her hip. Urs' grave eyes moved slowly around the circle of men.

"If it is true that I am a magic man," he said, "then I will make Gella a magic female. I will give her a piece of the something that is harder than stone, the something that kills those who would try to harm us.

"When I came here, after my pack was killed by the Big Water, I had two of these magic things. The stick I gave to Bar and it has killed Tlay, because Tlay was unjust. The other thing I kept hidden. But now I give it to my mate that she also may be a magic person, protected from harm."

He turned and strode from the circle. When he came back from his cave, he held in his hands a small, flat object made of the magic stuff. Solemnly he offered it to Gella.

"See!" he said. "Gella is magic. Urs is magic. These two gifts will protect us and the pack from all harm."

Gella looked down at the thing she held in her hand. There were tracks in it, deeper than one could make with Urs' sharp stones, but she could not know that they were more magic than

the flat object itself. She looked at the long, narrow stick that Urs still held in his hand. There were also deep, though smaller, tracks upon that, where the red flakes had been scraped away. But she did not know that those tracks were also more magic than even the wonderful stick.

How could Gella know what those markings meant? She was a female of one of the four packs of humans left alive in the world. How could she understand the word "Springfield" on the rusted barrel of the rifle Urs

held—the rifle that had kept its single .30-30 cartridge intact for more than a century, that it might rid the world of Tlay?

And how could Gella understand the tracks on the flat piece of harder-than-stone stuff she held in her hand—Urs' second gift? If she could have read the words, they would have meant nothing to her. A female of the pack of Bar could know nothing about a sign-post which read:

BROADWAY AND FORTY-SECOND STREET.



VISIT A PENAL COLONY ON URANUS
IN

PRISONER'S BASE

A Novelet of the Solar Space Patrol

By NELSON S. BOND

IN NEXT MONTH'S ISSUE

o

GOOD TASTE



Get relief from coughs due to colds without swallowing bad-tasting medicine. Smith Bros. Cough Drops taste delicious. Cost only 5¢.

Smith Bros. Cough Drops are the only drops containing VITAMIN A

Vitamin A (Carotene) raises the resistance of mucous membranes of nose and throat to cold infections, when lack of resistance is due to Vitamin A deficiency.



SCIENTIFACTS

INCREIBLE BUT TRUE

A SPECIAL FEATURE OF INTERESTING ODDITIES

By MORT WEISINGER

DISAPPEARING DIAMETER

THE EARTH is shrinking! The Earth radiates slightly more heat into space than it receives, science tells us. As a result, its temperature must shrink as the tem-



perature falls. It is estimated that ten feet of the inner rocks solidify every year; and that their thickness decreases 1/60 of an inch.

Thus, in a thousand years the Earth loses five inches of its diameter. The readjustment of the shrinkage causes strains and occasional slippages which are registered on the surface as earthquakes.

HEAT IN THE STRATOSPHERE

OUR stratosphere is not cold—but hot!

At thirty-eight miles above the Earth's surface the air temperature is at the boiling point of water, or 100 degrees Centigrade, while at 70 miles the heat is 20 degrees Centigrade—ordinary room temperature!

Ordinarily the stratosphere is thought of as merely an extension of the cold expanse of thinning air extending above the six miles of climate-breeding troposphere next to the Earth.

Balloon observations give no evidence that the temperature of the stratosphere is anything but icy cold

and uniform at about 55 degrees below zero Centigrade.

However, studies made during the last twenty-five years disclose certain phenomena such as sound reflection, tidal conditions in the upper air, and visually traced meteor paths which have led some researchers to believe that the conditions observed could be explained only if there existed hot layers in the stratosphere!

VOTING BY RADIO

YOUR opinion of a radio program can be recorded instantly!

Recently, when an organ recital broadcast was given over the air by a local station, radio listeners had their first chance in history to talk back to the broadcasting officials and say at once what they thought of the program.

An announcer stepped to the microphone and asked everyone in the town who had been listening to turn on a forty-watt lamp bulb momentarily. A few seconds later he asked those who enjoyed the program to repeat the act. A check-up of electric power stations serving the district produced data showing that ten per cent of the town's population of 60,000 had heard the program, and that ninety-five per cent of the listeners enjoyed it.

This experiment, successfully conducted, is paving the way for a national system of voting by radio. It won't be long before we can vote our crooners off the air!

DANGER SIGNAL

A MEDICAL electric eye can "see" death approaching!

This new death-seeing eye is a

highly sensitive photo-electric cell set to watch the minutest changes in the color of the blood below the skin. So far scientists have experimented only with animals, but the results have been so encouraging that human application is shortly expected.

The device functions on the principle that among the first signs through which the approach of death evidences itself is a diminution of oxygen. This diminution results in a darkening of the blood's color.

This electric eye is so sensitive that it can detect changes in the blood's color at the very earliest manifestation, thus giving surgeons and anesthetists time to take emergency measures during operations, at critical periods when a split second may mean the difference between life and death.

THE CHEMICAL KISS

THE skin of a pretty girl is made up of 13 chemicals!

According to chemical research, 100 grams of skin contain: Water, 61 grams; albumin and globulin, 0.7; mucoid, 0.16; elastin, 0.34; collagen, 33.2; phosphates, 0.032; fats, 0.761; common salt, 0.45; potassium chloride, 0.04; lime, 0.01; also minute quantities of



magnesium oxide, iron oxide, aluminum oxide, and sulfur.

So—there's KCl and H_2O —How strange that men admire it so! That formula we love so well... Has CaO , $NaCl$.

FREE ENERGY

SCIENCE is tapping the energy from our atmosphere!

French scientists are experimenting with the use of a captive balloon to secure and utilize atmospheric electricity. Their idea is to suspend a captive balloon in the air. The balloon would be provided with rigid metallic rings and metallic electricity collec-

tors. The electricity collectors and the rings would all be inter-connected and an insulated cable would bring the energy down to the earth.

Electrical energy does abide in the atmosphere, for scientific experiments have shown quite definitely that electric potential increases as we pass from ground level to altitudes. The voltage difference between two levels a thousand yards apart is enormous, about 300,000 volts.

LIVING PARACHUTES

ALL of Nature's smaller organisms can fall from great heights—and live!

Small organisms—fish, mice, snakes, etc.,—are living parachutes. Trout can



fall 1,500 feet into water without harm, according to experiments of the Quebec Fish Department.

Though streamlined, fish and other small animals fall slowly because of air resistance; they act as parachutes for themselves. A mouse can hardly fall far enough to injure itself.

A man, on the other hand, is ten times too heavy for his surface to break his fall. No wonder he needs a parachute.

1,000,000

HOW much is a million?

Millions of people speak glibly of millions, yet very few ever stop and think how much a million amounts to.

If we were to go back one million days in time, the date would be 799 B.C. It would take $11\frac{1}{2}$ days to count a million dollars, at the rate of one dollar every second, night and day. A million new dollar bills would make a pile $30\frac{1}{2}$ inches by $31\frac{1}{2}$ inches by $66\frac{1}{2}$ inches high.

There are 60 drops of water to a standard teaspoon; a million of them would be a little over half a barrel, or sixteen and a quarter gallons.

CONQUEST



O'Meara saw Anoa working

A Complete Novelet

By WARD

Author of "A Million in

CHAPTER I

Hail of Death

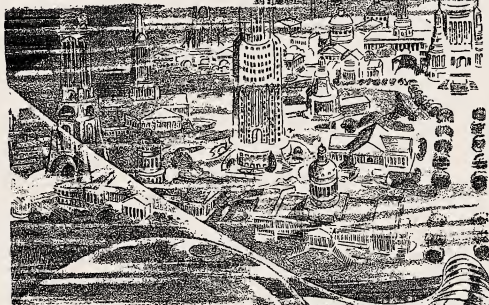
THE hail fell on the evening of June 23, 1975.

It fell, the first time, only in the northeast sector of Rochester, New York. A great many people saw it fall; but few found time to wonder why it did not melt.

Traffic Director Clarence Daily was one of the few. He had a clear view of the overcast sky and he saw the silver-bellied sub-stratoplane that flashed overhead a moment before the hail fell. He supposed it was an advertising scheme and took several of

A Holocaust of Flame Is the Grim

BY FIRE



feverishly at the controls

of Sunken Atlantis **HAWKINS**

Green," "Men Must Die," etc.

the pellets home to show his children.

The fire department head, who later in the evening heard Daily's hysterical tale, thought him crazy. That one of these pellets, placed in a child's mouth, could suddenly ignite and burn the child's head completely away and then go on and destroy the entire house was too fantastic for belief. He ordered Daily held for observation. And that was the beginning.

Later that night it rained.

The flames appeared a few seconds after the first spatter of rain. Small, dancing points of brilliant blue-white light, were born on the causeways, gutters and roof-tops of the Seventh level. The base of the flame was a small ball of intense white light.



Symbol of a Lost Continent's Wizardry!

Above the base, the body of the flame danced, a less bright feather of the bluest blue. —

Each flame disappeared a second after it was born. No one realized where they had gone. With the steady increase of rain, more flames appeared until they spread everywhere.

The crowds enjoyed watching the flames, until they heard the sudden increase in the roar of the slow traffic on the Sixth level—and the piercing, soul-wrenching human screams that rose above it.

It was then that the people saw the round, smoking holes in the deck of the Seventh level. The edges of the holes glowed redly. The newer ones dripped white hot streams on the seething mass of heavy carriers on the Sixth.

Those tremendous machines had suddenly gone berserk. Some of them were lying on their sides, rammed by others without drivers. Others broke through the guard rail to hurtle end over end to the ground below.

Men were like scurrying ants, hunting a haven in a hell where none existed. Many fell beneath the onslaught of crushing wheels; others leaped over the rail to instant death. And here and there, one of the plummeting flames would catch a man squarely.

THE flame would vanish into his flesh the moment it touched. Perhaps he would scream, a high, throat-searing sound, without meaning, but filled with fear and pain and death.

And then the flames would appear again at the man's feet to disappear again into the deck. The man would be no longer a man, but a sodden, quivering mass of flesh, pierced by the black hole the flame had left.

From the Sixth level, the flames dropped to the Fifth—the pedestrian and slow traffic level. They fell, bright shafts of blue and white, endowed with some devilish instinct to strike man, woman or child no matter where they fled.

Panic was the ruling force, and, as the night wore on into a nightmare of utter madness, Death was king. When the rain stopped and the sky cleared,

the moon appeared hesitantly to shed a wan light on the turmoil below. Great columns of smoke reared upward, shadowing the streets packed with struggling, panic-stricken people.

Those who fled the area were met by others flooding toward it. Motors roared and sirens screamed a whining overtone to the roar and crack of flames and the deafening clamor of people who were savages driven mad with fear.

Among the first to reach the stricken areas were the visa-operators. They were men with hard-bitten, cynical faces, whose eyes had grown bitter seeing too much greed and violence and death. They were the counterpart of the newspapermen of a half a century ago.

It was their lot to risk their lives that the millions of subscribers to their service could relax in the comfortable security of their homes and see the news of the world as it happened flashing across their private visa-grids. These men took these risks, not for money or fame, but because it was a job steeped in tradition and it was their jealously guarded privilege to continue it.

Peter O'Meara was one of these visa-men.

O'Meara and his technician worked by instinct alone through that night of hell; too stunned, too sickened by what they saw to think correctly. They were automatons, interested only in carrying their scope to the center of the disaster so that the scenes that flashed an instant later on the grids of the subscribers would be the best.

Morning found them pale and haggard in the office of the fire department head. O'Meara, tall and lean, his red-rimmed, blood-shot eyes burning with a feverish intensity, was holding a scope in front of Clarence Daily.

Daily was staring into the instrument with unseeing eyes. His gray-mottled face was twitching; his lips barely moved as he mumbled:

"And I give that little thing to Betty—she was just two the other day. Like she does with everything,

she put it in her mouth. Then, before I knew it, her—her head was gone—and this ball of fire had burned through the floor and the fire had spread.

"Limpy" Davis, the technician, was humped over his portable broadcasting set. His soot-blackened, scorched remnants of clothing hung from his narrow shoulders in shreds. Exhaustion and pain flamed in his aching weary eyes.

DAILY'S voice faded gradually until there was no sound. O'Meara carried the scope to the head of the department.

"You'd better say something," O'Meara told him. "They're expecting it."

There were harsh lines gouged around the older man's mouth—pain, worry and confusion were in his haggard eyes.

"No," he whispered. "No—I couldn't."

O'Meara knew that he was right. Anything the man might say now would reflect how great the disaster had been and how pitifully incapable the authorities were to cope with it. O'Meara shrugged wearily and turned away.

Davis struggled into the straps of the portable broadcaster, and followed O'Meara out the door.

Both men were silent on the trip back to New York—each lost in the memories of the holocaust they had just been through. Their minds were still too numb to grasp the full importance of the things that had happened, far too shocked to wonder why.

At noon, Peter O'Meara, the worst of his burns bandaged, pushed into the bedlam that was the office of William Hedges, Sequence Editor of the American Visa-Screen.

The walls of the room were lined with huge visa-grids. Most of them were dominated by the follow-up of the Rochester diaster, painting vividly the stark horror that had reigned there.

Hedges was a small, bald-headed man, hunched over a huge desk on which were the controls of the screens.

Here, he filtered, cut and censored each sequence as it was flashed in by a field unit, such as O'Meara and Davis were, and then allowed it to be broadcasted into the homes of the subscribers. He looked up at O'Meara, who stopped beside his desk, swung hard eyes over the younger man's bandages and tired, deeply-lined face.

"Be with you in a minute, Pete," he said, nodding.

A few moments later, Hedges was relieved by his assistant, and O'Meara followed him out to a pneumatic elevator.

"That was a good bit of work you did last night," he said, as they dropped toward the thirty-fifth floor. "You must have been in the middle of it."

"Thanks, Bill," O'Meara answered absently, as he followed Hedges out of the elevator and down a long hall. His eyes, blood-shot and burning, mirrored the turmoil that raged within him—a turmoil that found an outlet in his next words. "Damn it, Bill!" he exploded raggedly. "What was it? What happened? Do you know how many people died last night? Thousands! And why? What possible reason could there be?"

Hedges stopped and glared at O'Meara with hard eyes. "Get hold of yourself. You're going to get the answers to your questions in the next few minutes. This guy knows them all."

The man who knew all the answers was Stanely Westmoreland, a small, dapper man with thin features, a high forehead and the intense, dark eyes of a dreamer.

"I think you know this gentleman," Hedges said to O'Meara.

"Sure." O'Meara offered his hand to Westmoreland. "I interviewed him on that Atlantis discovery a few months ago."

"Quite true," the small man agreed. "In April—"

Hedges cut in brusquely. "The point is this: Westmoreland thinks the Atlantes are the ones who burned Rochester."

CHAPTER II

Westmoreland's Hoax

WESTMORELAND'S nod of agreement sent O'Meara's mind racing back through the past six months. He remembered that interview in April, and before that, the publicity of Westmoreland's expedition. "Westmoreland's hoax," they had called it then.

During January, 1975, Westmoreland, the only son of a recently deceased manufacturer, had financed the construction of a "depth-sphere," the plans of which had been developed by an unknown scientist named Petrie. The two of them had gone down in the sphere late in March, and after three weeks of absence had been given up for lost.

But Westmoreland had returned, alone, for Petrie had died, and the tale he had brought back had made him the laughing-stock of the world. He claimed he had discovered the legendary city of Atlantis!

In spite of the ridicule and laughter that had followed him about, he had insisted doggedly that his story was true. But in the face of continued ridicule he was finally forced to maintain a sullen silence. O'Meara had laughed with the rest; but now, as he remembered the Rochester horror, he began to think that it might be true.

"Yes!" Westmoreland's voice was deeply bitter. "And if the fools who run this country ignore it much longer, we are doomed—doomed to complete destruction!"

Hedges broke in again. "I'm convinced he's telling the truth. On the strength of it, the American Visa-Screen will build a depth-sphere exactly like he used. We want two men to go down in it. The catch is this: they probably won't come back."

"Yeah," O'Meara agreed. "I saw that. If the Atlantides are doing the burnings, the odds are a million-to-one against anyone's return. Even if they aren't, it's still a fifty-fifty proposition."

"But by seeing Atlantis, you might be able to tell us how to stop what they're doing," Hedges reminded.

"That's why I'll go," O'Meara said. "And Limpy will go with me. When do we leave?"

"Not for at least a month—it will take that long to build a sphere." Then he added, his tone sullen and bitter, "I'd go myself, but not after the hell I've gone through during the last six months."

"A month," O'Meara said, half to himself. "That will be the twenty-fourth of July—plenty of time for us to get ready. Thirty nights that could be like last night, if the Atlantides want it to be so."

The first week it rained twice—and twice the hail fell.

Each time, never more than ten minutes before the first drops spattered down, someone would see the silver sub-stratoplane flashing across the sky.

The flames, by the barest touch, killed hundreds. But that was only the beginning—the cause of three things that took a thousand times more lives than the flames themselves.

Fire added to the toll spreading rapidly. Unchecked, it became a roaring inferno. Gas and smoke rolled in giant clouds to suffocate those who escaped the fire. Panic and mob terror gripped the people, made them screaming, raging hordes that trampled thousands beneath their pounding feet.

THE belated governmental forces swung into action when the city of Boston burned. They knew, then, that each fall of hail was presaged by the flight of the silver sub-stratoplane. And they sought that plane with a concentrated fury.

Above each city they wove a network of aircraft—a net-work that remained in the air twenty-four hours a day. Troop after troop of soldiers poured into each city center, prepared to stop the terror-crazed mobs who killed in their haste to flee from doom.

Two nights later, a great sea of fog rolled in across New York, and above the fog, banked miles into the air, were water-laden storm clouds. It did

not hail that night—instead, it rained those flames of death!

After that, every man and woman and child seemed to reach the same decision. Leave the cities! Their only hope was the open country! And to the country they fled, those teeming, fighting hordes, clawing for every inch of space on trains and roads and planes.

The best scientific minds in the world concentrated on analyzing those pellets. Many varied reports were sent in, but even the best reflected the utter helplessness of these men to protect their country.

"A substance comparable to the thermite commonly used in welding," they said. "More specifically, it is a compound of aluminum, iron oxide and a substance hitherto unknown to us, which we designate as alpha. It is the latter element that ignites at the touch of water and sustains the tremendous heat. We are unable, as yet, to offer an effective combatant."

On the following Sunday, at five o'clock in the afternoon, their enemy finally came into the open. Every visa-grid flashed the picture that blocked out, by reason of greater power, the broadcasting companies who normally used them.

The image was the face of a man. The face stood alone, stark white against a background of solid black. A high, domed forehead bulged above piercing, black eyes; the nose, sharp and beaked, projected over the thin line of bloodless lips.

"For three weeks this destruction will continue," a flat, unemotional voice intoned, "to impress upon you the futility of resistance. At the end of that time, we will select one of your people to represent us. He is to be considered a supreme authority, whose every order will be our order and who must be obeyed without question."

"Should he fail to accept this office, his fate will be instant death. Should you fail to obey his orders, your civilization will be destroyed. Know by this that Atlantis will rule the world—a world, if necessity demands, empty of all people but her own."

The voice faded then, and suddenly the screens were blank. But his words lived on, burned deeply into every heart by the white-hot iron of fear.

Night after night, the hail of death continued.

As each day wore into the nightmare of the next, O'Meara and Davis became more gaunt, more ragged and hollow-eyed. There seemed to be no sleep for either of them, nothing but an eternity of death and fear and flame.

The depth-sphere was completed exactly one week before the time set by the Face for surrender. Shortly after midnight, it was loaded on a fast cruiser and carried swiftly out to sea.

HEDGES came to Peter O'Meara, who stood in the first gray light of morning looking with blank, unseeing eyes. Hedges saw the hollows in O'Meara's cheeks, the gray color of exhaustion in his face.

There might have been a lot of things Hedges would have liked to say, but if there were, his tongue could not find them. He was content to stand, as O'Meara stood, thinking back through the past few weeks.

Finally he broke the silence. "We'll be there soon, Pete," he said. "At the rate we're going, sometime tonight."

"It can't be too soon to suit me," O'Meara snapped.

"Something's come up in the last couple of hours. You might change your mind when you hear it."

"Nothing will change my mind." O'Meara was firm.

"Listen to me, anyhow. The government finally admitted Westmoreland could be right. They went to him and made him tell everything he knew about Atlantis. Plans are under way for a naval attack. They're going to bomb Atlantis."

"When?"

"Sometime in the middle of the week," Hedges said. "Three days—possibly four. That's not long enough for you to get back."

"Maybe and maybe not, but I'm still going."

They came into position late that night. The ship was strangely silent

as the depth-sphere was lifted out of the hold and held ready at the rail. The sphere was made in the form of a hollow ball, some thirty feet in diameter. The walls were five feet thick and penetrated by two apertures. Port-hole was made of visalite, a transparent material with the structural strength of steel.

Davis entered the sphere first. O'Meara paused at the top of the hatch and looked around him. It occurred to him then, in that odd, tight moment, that he might not see this world again. Then he shrugged.

Jerking himself away from that thought, he closed the hatch and dropped down beside Davis.

"All right, Bill," he said into a microphone. "Any time."

The depth-sphere settled slowly into the water. Then, as the water-line reached the port, it dropped suddenly, lifting both men from their feet. They knew by the tightness in their stomachs that they were dropping toward the floor of the ocean with incredible swiftness.

After those first tense moments had passed, the two men were able to relax and look more closely at this room they might never leave. The walls were lined with oxygen tanks, enough to insure a month's supply. On one side, near the single port, was a panel of dials indicating depth, pressure and rate of descent.

The sphere was a free-sphere in the sense that there was no cable connection to the ship. They could return to the surface immediately by releasing a ballast of lead shot.

Davis stood staring out the port-hole, humming a very old tune concerning a man named Davy Jones. O'Meara took his place at the control board.

CHAPTER III

Descent to Atlantic

THERE was no escaping the oppressive sense of the ever-increasing wall of water above them—between them and the life they had

known. And that feeling grew, with each foot of sudden descent, until it was necessary to hold their minds away from it, lest in sudden panic they trip the ballast release.

Minutes slid into hours as they settled to the grim wait, and the hours crept by slowly. . .

It was Limpy Davis who broke a long silence. His voice was quiet and controlled.

"Look, Pete," he said. "We're in for trouble."

He pointed to a circle of moisture forming around the edge of the port.

O'Meara jerked erect, strode swiftly to Davis' side. His stomach squeezed into a hard knot as he looked at the moisture under Davis' finger. He forced his voice to be slow and even.

"Do you know what that means?" he asked.

"I think I do," Davis replied laconically.

"You're right. The port isn't strong enough." He turned to the control panel and watched the depth-gauge. Then he said: "A half mile to go before we get to the level Westmoreland gave us and then—"

"I guess I'm thinking the same as you," Davis said.

"Right," O'Meara agreed. "We'll take a chance. How much more do you think it will stand?"

Davis shrugged. "The way it's been going, about half what we have to go. But what the hell, we wouldn't get back anyhow, and this isn't such bad odds."

They continued on their way. At a quarter of the remaining distance a drop formed under the port trickled slowly to the deck. Both men watched it with quiet fascination. Neither spoke.

The sphere was falling very slowly now. With the increase of pressure, it gained buoyancy. But they continued falling, and with each added foot, the pressure-gauge swung past figures that were almost inconceivable.

At three-quarters of the distance to the given depth, the drop changed to a small stream of water no bigger than a pin and it shot the width of the compartment without the slightest effort.

Both men ignored it completely. O'Meara was absorbed in watching the deathlike slowness of the dials. Davis sat on the floor humming softly to himself.

Suddenly, the sphere canted, hurled both against the bulkheads.

O'Meara recovered first. He clawed his way to the port, looked out, and cursed in utter amazement at what he saw. Davis scrambled to his side—his mumbled curses mingled with O'Meara's.

Atlantis!

The sea was no longer black, but a brilliant green lighted by a daylight from below.

The object upon which the depth-sphere rested was a huge dome of some transparent material, spreading away to vanish beyond the limits of their vision. Beneath that dome was a scene such as a man would see from the same distance above the earth.

In the distance, to the north, lay the outline of a tremendous city. Buildings jutted upward toward what must be called a sky. Near at hand and below them was the quiltlike pattern of fields.

"Hey!" Davis suddenly exploded. "We're moving!"

AND they were. They were drawn across the dome by some unknown force toward that city in the distance. O'Meara came suddenly to life.

"Limpy," he bawled. "Start that broadcaster!"

Both men worked in a fury of concentrated effort. O'Meara brought the scope into place. Davis worked swiftly with the dials of his broadcaster. His voice was tense, affected.

"I can't, Pete! I can't get through. Something's wrong."

After five more minutes of frantic work they finally gave up. There would be no sequence sent out. Accepting that defeat, they returned to the port and gazed down at the portion of the city already below them.

There could be no doubt of the mastery of the architects who had designed that city. Here, the classic Grecian principle of clean, simple

lines had been executed to the ultimate. Color, too, had been incorporated. Delicate blues and greens and reds and browns were blended, contrasted everywhere, by an artist who loved the warmth of simple, restful coloring.

The path along which they were being drawn dropped toward the side of the dome to a point where the dome met the floor of the ocean. O'Meara and Davis saw they were approaching an entrance.

A long tunnel, of the same material as the dome, extended out on the ocean floor for several hundred feet. The tunnel was divided into numerous compartments. Quite suddenly, O'Meara realized the tunnel was an air-locking device. Then there had to be air inside the dome. That meant these men were like themselves. . .

O'Meara imagined the force that held them against the dome and drew them toward the entrance was some sort of magnetic force. But he had little time to think about it, for presently they entered the mouth of the tunnel and were progressing by slow stages toward the interior. Ten minutes later they came to rest inside the major dome. O'Meara and Davis saw the face that peered in the port.

The face was young, vigorous and healthy. The forehead was high, sweeping upward into a close-clipped mass of curly, golden hair. The eyes, beneath strong brows, were brown and calm. There was intelligence in that face, and perhaps friendliness, but also there was the firm set of purpose.

O'Meara and Davis had been so engrossed in the face that the sudden blaze of light came as a complete surprise. They whirled quickly.

The flame of death had burned through the side of the sphere!

Davis' stream of savage curses slowed suddenly. He slumped to the floor. O'Meara became aware of a strange, sweet odor he had never before known. A pleasant feeling of languor swept through his body. He slid into a soft, warm darkness. . .

The return to consciousness was rapid—like the sudden lifting of a curtain. There was no interval of half-

consciousness, no nausea, pain or discomfort. One moment O'Meara had been lost in a dreamless sleep, the next, he was in full possession of his mind and fully refreshed.

HE was content to lie as he was for the moment, enjoying a sense of well being. Presently, the full realization of his predicament struck him. He tried to rise, but not a muscle in his entire body would respond!

A face appeared again above him. O'Meara saw a hand that clutched the slender tube of a hypodermic needle. He tensed himself as the needle neared his neck. There was a sharp sting, then a rapid warmth sweeping through the muscles of his face and head.

He wanted to jerk his head away from the needle. To his surprise, he accomplished exactly that. His head moved. A sudden explosion of vitriolic curses gave proof that Davis had received the same treatment. O'Meara found, as he tried to rise again, that only his head had been released from the strange paralysis.

"Pete! Pete!" Davis called out. "Are you all right?"

O'Meara pulled his head to face the smaller man.

"Sure, I'm all right," he said. "Only I can't move."

"Those dirty—" Davis swore. "They hooked us!"

O'Meara agreed with him. They were hooked. Somehow the Atlantides had gained entrance to the sphere during the time he and Davis had been unconscious, and had carried them out to leave them on the ground a short distance away from the sphere. O'Meara supposed that they had been overcome and paralyzed by some strange gas.

Studying the three men who had effected their capture, O'Meara found himself awed at the sight. Each of the men were more than six feet tall, splendidly fitted with wide shoulders and tapering hips. Their clothing was of some shiny material, much like the finest silk. It was loose-fitting, yet neat, allowing them the utmost free-

dom of movement.

One of them, evidently the leader of the party, issued sharp orders in a strange tongue. O'Meara and Davis were lifted and carried to a queer beetlelike car. They were placed in seats in the rear while the three Atlantides took their places in front. There was a sigh of compressed air escaping, and the car fled along a wide pavement toward the heart of the city.

O'Meara knew, despite the absence of violence, that the Atlantides were not friendly. Theirs was the controlled animosity of an intelligent people. No less dangerous in its reserve than violent anger. Exactly what their fate would be at the hands of these people, O'Meara decided, time alone would tell. He concentrated his attention on the city.

The buildings through which the pavement led them were not shops, but wholly residential. The sidewalks held many of the Atlantides, and each of them, he noted, men and women alike, were splendid physical specimens and all seemed young.

Perhaps the one thing to impress him above all else was the fresh cleanliness in everything he saw. The very lines of the buildings reflected it. Clean-cut and sharp, they swept upward in carefully controlled arcs and tangents. The coloring was almost virginal in its purity. It was bright and warm, yet it escaped gaudiness by a wide margin.

The pavement emptied suddenly into a large square, in the center of which stood a building that was magnificent in its simple lines and coloring of soft white. Here, indeed, was the ultimate of the superior design and appreciation of the Atlantides. O'Meara could only suppose it to be the center of administration.

THERE were a number of smaller buildings set apart from the main building. They stopped near one of these and the leader ordered O'Meara and Davis carried in. The room in which they were placed appeared to be sleeping quarters. The beds, O'Meara found, were soft beyond anything he had ever known.

After the Atlantides had gone, Davis raved and swore for long minutes before he gave it up.

"Damn this being paralyzed!" he raged. "All we do is just lay here like a couple of hogs waiting for the slaughter. What're they going to do with us, Pete?"

"I wish I knew," O'Meara answered. "I've got a feeling it won't be nice. All we can do is wait."

"Sure, just wait—and every day a few thousand more die back home. And what do we do? Nothing. Nothing but lay here—"

Davis was interrupted by the sudden appearance of a figure in the doorway. It was a woman, at whom O'Meara stared in utter amazement. Davis looked at her open-mouthed.

"Sweet Mother!" Davis whispered, after a long moment. "It can't be true!"

It was the beauty of the woman that held them spellbound. Clad in a simple gown, she presented a striking picture standing hesitantly in the doorway. The fabric gave visions of a perfect figure. Too perfect, O'Meara thought, to be true.

Each second he found more things to surprise him. Her hair was shoulder length, soft and lustrous. The smooth oval of her face was broken by wide-set brown eyes, a short, straight nose and full red lips.

A slight flush crept into her cheeks at Davis' remark, adding a new softness to her beauty. She went first to Davis, looked at him for a moment, then to O'Meara.

Their eyes locked, for what seemed to O'Meara to be only a breathless instant. She gasped and her poise deserted her, left her confused and blushing.

"Peter!" she stammered. "Peter O'Meara!"

O'Meara gulped his surprise. "Why . . . why yes. But how—"

She turned and fled from the room. "Well, I'll be damned!" It was Davis who swore.

"Who is she?" O'Meara exploded. "How did she know my name?"

Davis wagged his head knowingly. "Pete, old boy, you sure get around."

"Stop it, you fool!" he grated. "If you'll think a minute—"

He stopped, for an Atlantide had appeared in the doorway. He carried a tray of food to a small stand between the two beds. He smiled at both of them, and O'Meara saw that he held a hypodermic needle.

The Atlantide's voice was deep and resonant. "I've no doubt you men are hungry. If you will give me your word not to attempt violence and to remain near the house, I will free you from the gas." He looked at them expectantly.

"My God, Pete!" Davis whispered hoarsely. "They talk like us!"

CHAPTER IV

The Strange Atlantides

O'MEARA was still gazing at the doorway where he had last seen the woman.

"I beg your pardon," he said suddenly. "But, that woman. Would you tell me who she is?"

The Atlantide grinned. "You must mean my sister. Her name is Anoa." "But she knew me!"

"Oh, yes. She has for a long time. The fact is, I think she is in love with you." There was a humorous gleam in the young man's eyes. "Did you notice that?"

O'Meara's face flushed red. "But, listen . . . How could . . ."

"Oh, I see," the Atlantide answered. "You don't understand how she could be in love with you when you have lived in the upper world. Isn't that it?"

"Yes," O'Meara said feebly. "That's it."

"Then, I'll explain it, but first you must eat. Will you give me your word as I asked?"

Their word was given and the Atlantide made the necessary injections. Presently, they were able to move again. Davis promptly commenced eating, but O'Meara was too absorbed in the explanation to consider it.

"Let me introduce myself," the At-

lantide said. "I am Delamoa. You, of course, are Peter O'Meara and he is Limpy Davis. I, too, have known you both for some time. You see, we have an instrument similar to your own visa-screen. There is one main difference. The instrument does not need a broadcaster. It will pick up any scene on the face of the globe. Since the machine is available to any of us, it has become one of our main sources of amusement. My sister found you several years ago. She has followed you in everything you did. There is no doubt she admires you very much."

The blush covering O'Meara's face deepened as his mind flashed through the possibilities of such a machine. Then he found himself balancing the good things he had done against the bad—and finding the sum a source of exquisite embarrassment.

O'Meara swallowed hard several times.

"If she—ah—admired me, then why didn't she speak to me?" he asked.

"But that would have been impossible," Delamoa answered. "We cannot penetrate the protective force area with radio waves."

After that, the conversation led away from the woman to a thousand other questions O'Meara formed as rapidly as the Atlantide could answer them.

He discovered that the lives of these people were made possible, mainly, by the discovery of a substance which they called *amum*. The material was mined several miles below the ocean floor, and under certain processes it was formed into a transparent substance, incredibly stronger than the strongest metal the upper world could produce.

The dome, Delamoa told him, had been a force area, at first, but because of the power necessary to activate it, they had constructed the walls of *amum* in its stead. The force area had then been used only for added protection.

The use of the instrument Delamoa had described explained to O'Meara how they could speak his language. He learned that they also spoke every other language in the upper world.

Finally, he came to the problem that concerned them most.

"About your conquest of the upper world," O'Meara said. "Why, in God's name, do you people—"

"No," Delamoa interrupted firmly. "I am forbidden to speak of that. The council will answer your questions later. While I have seen the destruction of your cities and the horrible damage done by the flames, I can do nothing but offer you my deepest sympathy."

PETER O'MEARA was puzzled. "What is this council?" O'Meara asked.

"It is the governing body of Atlantis."

"Can you give me an idea of what will happen to us?"

Delamoa considered this for a short moment, then he spoke.

"If you fail to show the council a good reason why your country should not be destroyed, which is very doubtful, you will be executed."

"But, our country has never—"

"Please," Delamoa held up his hand. "I've said far too much already. More, would only make it difficult."

He left them, then, and O'Meara and Davis talked together for hours. On one thing they were agreed. There was nothing to be gained by trying to escape.

Davis, with his usual fatalistic outlook, drifted into a heavy sleep, but O'Meara found himself too restless. He left the room and fumbled his way along the now darkened hallway toward the rear of the house. A door let him into a room in which a glow of light filtered from a square object against the far wall.

He fumbled for the switch that Delamoa had said activated the cold-light impregnated in the material of the ceilings. With the coming of the light, O'Meara saw the room was a kitchen, and the object from which the glow had come was the counterpart of a stove.

He found the source of the glow to be a small replica of the flame that had destroyed the largest cities of his country. For a moment he was

puzzled to see it thus held, for always before it had burned through everything it touched.

Then he realized that the stove was made of *amum*, the metal so much stronger than the finest steel. Apparently, then, the Atlantides used the flame for cooking and heating. A further search disclosed a container of the pellets that were, except for smaller size, the same as those that had fallen on New York.

A voice came from behind him, tight and apprehensive. "Surely, you're not thinking of escape!"

O'Meara spun to face the voice, and saw Anoa standing there. Only one thing about her face had changed. Her eyes, once clear and cool, were reddened and a little swollen. O'Meara knew that only tears could do that.

She went swiftly to his side, caught his arm in tight fingers.

"You mustn't," she whispered fiercely. "You mustn't try to escape. It's impossible!"

"No," O'Meara said. "I realize that. Anyway, I gave my word to Delamoa."


"Your word!" Anoa's voice was suddenly bitter. "I'm surprised he would take it—after what happened before."

"What do you mean?"

She caught her lip in her lower teeth. "I shouldn't have said that. Pretend I didn't. Please."

"Now, see here—" O'Meara began.

"Please!" Her hand covered his mouth. "The council would be very angry. Come, it's nicer in the garden."

 O'MEARA could only shrug his shoulders and follow her. She led him down a narrow path toward a bench beside a fountain.

Above them the great arc of the dome glowed with a warm light, enough so that she was outlined against a background of shadows. More than anything, O'Meara was aware of the strange, heady perfume of the girl beside him.

Turning, he found her watching him with a frank concentration. Her eyes sought out every plane and angle of his face. He was hardly aware of the queer, empty feeling inside him, or the sudden trembling of his

body. He remained quite still, content to hold the moment long and sweet between them.

Her hands moved to his face. They were soft and cool as she drew his head toward her. O'Meara lost all sense of time and memory and identity. There was only room for him to know that her lips, moist and trembling and warm, were pressed against his own.

Then she drew away, turned from him to stare into the depths of the fountain.

"Give me the *tomone*," she said softly.

"The what?" O'Meara asked.

"These," she answered, and took the small pellets he still carried. One after another she dropped them in the pool, where they exploded into flame and filled the water with a thousand shimmering colors.

O'Meara stared into the pool, fascinated by the weird beauty of the flames.

"What are they?" he asked softly.

"Our best scientists are unable to fathom them."

Her forehead twitched for a moment, as she sought a simple explanation.

"It's hard to put it in words you would understand," she began slowly. "Our classification and nomenclature of the elements differ so greatly from yours. But the base of the *tomone* is an element that we call *tomo*. Your scientists have not yet discovered it. However, it is similar in action to the compound of aluminum and iron oxide that your people use in welding, but it is capable of a much greater heat. Here, it is a harmless and economical means of heating and quite safe, for our metal *amum* withstands the heat. But in your country, it would be very dangerous."

O'Meara's mouth sagged in sudden bitterness.

"Have you watched what these things did to us?" he questioned. "To New York and Boston?"

She nodded slowly, watching the play of light on his face.

O'Meara's voice grew suddenly harsh and his anger flamed to a white

heat. "Thousands dead! Hundreds of thousands died in the streets, in their beds, and not one of them had a chance!" He jerked to his feet, his voice shaking with fury. "And you—your people did that! You're fiends, every one of you!"

Her face was deathly pale.

"No, Peter! No!" she cried, and then she was beside him, clinging to him. "We didn't, Peter!"

O'Meara pushed her away roughly, then whirled and strode back to the house. Above the drum-beat of anger in his brain, he knew she had crumpled to the bench and was sobbing, her head pillowed on her arm.

HE spent that night in sleepless torture. There was still the feel of her lips to haunt him, the soft tenderness of her hands. Angrily he would thrust these thoughts away, remembering what the Atlantides had done.

Through it all the phrase, "We didn't, Peter!" kept echoing through his brain. And in the early hours of the morning—exhausted, defeated and admitting how much she meant to him—he clung to that phrase as a last slim thread of hope.

The council summoned O'Meara and Davis the next morning. The room was large, barren except for a half-round dais upon which five men were seated and a bulky projection machine against one wall.

The men of the council were clad in long, white robes. About each of them was an air of calm deliberation. There was no hint of anger and hate; only a stern purpose. One of them was seated a little before the others and upon him rested the task of questioning the prisoners.

His voice was clear, deep and resonant.

"You, Peter O'Meara," he said, "will answer my questions. Let it be understood that you are a representative of your country, and upon your answers, the fate of your country is wholly dependent. But before the questioning, there are some things that you must see."

The councilman darkened the room

by moving a switch on the desk before him. There was a moment of silence, then a low hum sounded as the projector came to life.

O'Meara half turned to find a square of light flickering on the wall. In the square was a confusion of shadows that rapidly solidified into a moving picture. It was a scene of an attack on New York! O'Meara could see the falling streaks of flame, the burning buildings, the fleeing people. He was sickened by the horror of the destruction.

Finally, the machine took them to a navy yard where last minute preparations for the attack on Atlantis were being made.

The scene thrilled O'Meara. There was the gallant defense of a nearly demoralized country. Anyone seeing it would know that as long as a breath of life remained that country would not be conquered.

The image faded as the councilman again bathed the room in light. Only O'Meara's big hand stopped Davis from hurling himself bodily at the council.

"Damn them!" Davis hissed. "Damn them!"

O'Meara, tight-lipped and tense, waited.

The councilman spoke again. "The attack of your navy is scheduled for tomorrow at noon. If they reach their objective and drop their depth bombs, we of Atlantis will die. Even though the dome is strong, the concussion and the weight of the water would be too much. The dome would break, the water would pour in."

O'Meara remained silent; Davis muttered.

"We are prepared to stop that attack. And we can stop it—but only with the complete destruction of the navy. There could be no halfway measures. With that to spur your people on, we would have to destroy your country in the same way—every man, woman and child. A terrible thing, but our only weapon is such that it cannot be controlled. It destroys everything. Simply put, our question is this: Why does your country insist on attacking us?"

CHAPTER V

Escape from Death

FOR a moment, O'Meara was too stunned to answer. "But you saw what your flames are doing to us!" he cried. "Are we to take that without a struggle?"

"No, certainly not. But what can you gain by fighting us?"

O'Meara's brain was struggling in a mire of confusion. He started to make the obvious statement twice, and each time stopped it.

"You mean, your country is not invading us?" he queried, puzzled.

"Of course not!" The councilman was becoming impatient. "What possible reason could we have for that?"

Grimly, O'Meara told him of the Face who had claimed to be of Atlantis, and of the Face's ultimatum. The councilman listened impatiently until O'Meara had finished. Then he turned and conversed with the other four in the Atlante tongue. When he turned, his face was set in decision—hard, merciless and unyielding.

"We of the council are convinced that what you say are lies. You cannot be as stupid as you pretend. Therefore, we have no alternative but to enforce upon you the sentence of death."

"But, I'm telling the truth—" O'Meara began.

The councilman interrupted. "You have the equivalent of twenty-four hours in which to make your peace. Until that time I would suggest you cause no trouble."

With that, the entire council arose and left the room.

O'Meara and Davis could do nothing but watch, stunned.

"And they call that justice!" Davis finally exploded. "Why that's the rottenest frame-up I ever saw!"

"Listen to me," O'Meara cut him off. "They didn't frame us—they did it for a reason. Limpy, we've got just twenty-four hours to find out why they don't believe us, and why they insist they aren't attacking the States."

That day went by, a succession of hours that were, to O'Meara, the fleetest of minutes. It seemed to him that the answer to the questions he had put to Davis danced before his fingertips—tantalizingly close, yet always eluding him.

Long after the dome had dimmed and darkness fell, O'Meara paced the room steadily, in a rhythmic pattern. Finally, he threw himself down on the bed, exhausted, envying Davis his stolid calm that enabled him to sleep.

O'Meara heard something rustling in the doorway.

He bolted upright, swung his feet to the floor. At first, he couldn't believe, but the warm arms around his neck convinced him it was not a dream. It was Anoa.

Her lips sought his hungrily, and he pressed her close.

Suddenly, she pulled herself away.

"Peter, you must come with me!" Her voice was tight, quivering. "Hurry! We have so little time!"

"But where?" he asked.

"Don't talk!" she whispered, desperately insistent. "Wake your friend and come!"

O'Meara went swiftly to Davis' side and shook him. Davis awoke, bellowing curses against O'Meara's muffling hand. Anoa waited impatiently at the door. Then the three of them stole quietly from the house, fled like three frightened shadows through the stillness of the night.

THE way she led them was strange to O'Meara, but he followed her unquestioningly. Anoa stopped suddenly in the deep shadows of a doorway and motioned them into the protective darkness.

"Where are we going?" whispered O'Meara close to her ear.

"To the depth-sphere," she replied. "I repaired the damage done by the *tomone* and replaced the port."

"You did that? A woman?" Davis was amazed.

"Certainly." She was becoming very impatient.

"But why?" O'Meara asked.

She caught his hand and held it tightly. "I believed you," she whis-

pered fiercely. "You must stop your navy from attacking us."

O'Meara phrased the question he had fought with through the day, but before he could put it to words, she held her hand across his mouth, drew him deeper into the shadows. A vehicle filled with men passed and disappeared.

Then Anoa led them from the doorway, running again through the deserted streets. There was no chance for O'Meara to speak after that. It was all he could do to keep pace with her.

Finally, they had left the city behind them and were running along the pavement toward the air-lock. Twice they had to seek the shelter of the roadside ditch as vehicles passed them going toward the city. Then they continued running toward their objective.

In the shadows by the sphere, Anoa caught O'Meara and held him close.

"Pray the port will hold, Peter," she sobbed. "I did my best, but it was not meant to hold when it was built."

Those words struck O'Meara like a hard blow. Suddenly, the problem was clear to him. The fact that the port was faulty, that it was meant to break and kill them, could only mean one thing.

"Tell me," he rasped, grasping the girl's shoulders. "Tell me if this is the reason the council would not believe me, and why they say they aren't attacking us?"

She nodded her head in answer to his rapid flow of questions, begging him each time he stopped for breath to hurry.

"But what of you?" he asked. "What will the council do when they know you helped us to escape?"

"Please, it doesn't matter," she panted. "I'm only one against the millions in your country—and against you. You must live."

"Come with us," he suggested.

"I can't. Someone must work the controls to let you through the locks."

Suddenly the dome lighted!

A sharp cry escaped her lips.

"They know!" she cried frantically. "Hurry!"

"Tell them to wait," O'Meara urged desperately. "Tell them if the navy doesn't attack, they'll know I stopped it and that you did right in letting us go. They'll believe you—they must believe you!"

"Yes—yes—Please! They're coming!"

The trip through the air-lock seemed to be an eternity in which everything stood still. Through the port, O'Meara could see the van of rapidly approaching cars drawing near the control room. The girl seemed unaware of them, for she worked with cool, steady speed.

Then, only seconds before the Atlantides reached the girl, the depth-sphere was seized by the pressure of the depths, shot upward with tremendous acceleration.

O'MEARA, clinging to the port, caught one last glimpse of the girl. It was like a sequence burned deep in his memory. The Atlantides were grouped around the control room, watching the sphere. Between them, crumpled into an inert, pathetic figure, Anoa lay, broken under the strain.

The distance lengthened, drew a curtain of darkness between them. . . .

The trip to the surface was only a confusion of memories to O'Meara—a period of time through which he was forced to struggle in a fever of impatience.

Davis came to stand beside O'Meara at the control board. There was some of O'Meara's strain reflected in the smaller man's taut words.

"The visa-screen will work, Pete," he soothed. "Why not contact the navy and tell them what we know?"

"No, you fool!" O'Meara snapped. "Every man, woman and child in the world would know we're coming!"

"Oh, I get it. That wouldn't do at all."

Davis fell silent to let the minutes tick slowly by.

Finally, the upward rush came to an abrupt end. Both men were lifted from their feet as the sphere stopped and then dropped back to lay rocking slowly on the swell. O'Meara was first to

reach the hatch. He spun the locking wheel and heaved the cover back. A million stars blinked their surprise from the great arc of the sky. A rapidly fading moon spilled a wan light across the faces of the two men.

Suddenly, O'Meara came to life. "Get the light, Limpy," he snapped. "Hurry it!"

Davis dropped down into the sphere. A few moments later he passed up the searchlight. O'Meara fastened it in place, trained the powerful beam toward the stars. Then, forcing himself to work slowly, he began breaking the beam.

S.O.S. S.O.S. S.O.S.

An hour passed, then two. The light on the eastern horizon grew, spread rapidly across the sky, fading the intensity of their beam. O'Meara worked grimly on. Davis cursed steadily, feverishly as the moments sped by. Then, above the sound of the wind and water, there came to them the high-pitched whine of a sub-stratoplane. Davis heard it and saw it first.

"Pete!" he shrieked, pointing toward the sky. "There it is!"

O'Meara saw it, a bright speck of light moving rapidly toward them. The whine grew louder with the approach of the plane, vibrated loudly above Davis' exultant cheers. The plane circled them several times, then drew away to come back on the surface of the ocean.

"Stand by to come aboard!" a voice shouted.

O'Meara dived off the sphere and swam the short distance to the plane. Strong hands helped him into the cabin.

Davis followed a moment later.

"Where the hell did you guys come from?"

The question had been asked by a tall, lean man in the gold and white uniform of a lieutenant-pilot of the United States Navy.

"Davy Jones' locker, no less," Davis panted.

"O'Meara and Davis," O'Meara said slowly, looking at the serious, wind-tanned face of the officer. "Just returned from the city of Atlantis beneath the waves."

CHAPTER VI

Unmasking a Madman

A MAZE and disbelief were written in the officer's face. He looked at O'Meara as though expecting him to say it was a joke.

"All right," he said finally. "You don't look like a guy to kid me. I'm Lieutenant Stevens. We're on patrol duty over the position given for the city of Atlantis. But how—"

Rapidly, then, O'Meara gave the officer a brief summary of what they had been through. Then he told him what lay ahead. While O'Meara talked the officer's face ran a gamut of expressions. Amazement, disbelief, awe, and finally a puzzled doubt.

"God, I hope you're right," he said. "It'll save a bloody war if you are. But it doesn't hardly seem possible that one man—Anyway, it isn't up to me. I'll have to report in, and let my superiors decide."

"But your screens—" O'Meara protested. "Everyone will know."

The officer shook his head as he led them to the broadcasting room: "Not the navy's. It's the same as code. Only our receiving screens will get it."

"Smith," the officer said to the man at the control panel, "contact the flagship. A matter of utmost importance." Then to O'Meara: "They're on their way here. There's damned little time left."

The screen came to life, and presently the stern visage of the fleet's high commander appeared there.

To him, O'Meara related with desperate urgency all that had happened, and what would happen if the proposed attack were carried out. The high commander heard him out, but when he had finished the commander's face showed he believed little of what O'Meara had said. He ordered them to proceed toward the ship and to stand by for further communications. Then the screen went dead.

"He's taking it to Washington," Stevens said without enthusiasm.

"Maybe he believes it and maybe he doesn't. All we can do is wait. In the meantime, sit down. These crates jump when they take off."

Half an hour later, as they winged toward the west, the screen again came to life. The high commander's orders were terse and to the point.

"You will proceed as you suggested," he said to O'Meara. "The plane and crew are at your disposal. You have permission to go to any extremes necessary to accomplish your end."

"Will you hold your attack?" O'Meara inquired.

"There is exactly time enough for you to accomplish your purpose before we reach our objective. You will keep us informed of your progress and ultimate success, if any. If you fail, the attack will go through as scheduled."

"But—" O'Meara began, then stopped. The screen was dead.

A sudden change in course and rise in the sound of the engine proved that the lieutenant had heard and was doing his part. He came to O'Meara and put a hand on his shoulder.

"We'll try," he said. "It's the least we can do."

It seemed to O'Meara that there was no end to the horrible task of waiting. Their progress seemed pitifully slow against the flight of time. All but forty-five minutes of their allotted time had passed before they saw the first green strip of shore-line. O'Meara watched it crawl under their wings as they rocketed across the sky.

IN the next fifteen minutes, O'Meara saw the scene below unwinding like a crazy strip of film—a sequence of a horrible nightmare. New York, almost deserted, was a heap of smoldering ruins. Only a few people were straggling away from it.

All this added greater weight to the burden on O'Meara's shoulders. If he failed, this would be only the beginning—a prelude to a symphony of horror to follow. Then, too, closer to him, was the knowledge that Anoa would die, and it seemed to him he could feel her presence near him, urg-

ing him on to do his best.

The plane jeered suddenly northward, following a broad cross-country viaduct into a thinly populated district of large estates. He left his seat by the window and went to the control cockpit. Watching the ground, O'Meara slid into the straps of a parachute pack.

"We're almost there, Lieutenant," he said. "Better drop down a little."

The plane lost elevation and cruised along only a few thousand feet above the ground. O'Meara still sought a familiar landmark. Suddenly, he saw it. A great white house nestled in a grove of trees.

"There it is," he said softly. "The one with the green roof. Now, give me a niter-gun."

"Hey!" Davis shouted behind him. "Where the hell are you going? You wouldn't leave me, would you? Give me one of those 'chutes."

"This is my job, Limpy," O'Meara said quietly. "You stay here. Lieutenant, here are your orders. Circle above that field and let me bail out. Then drop down and bomb the road on both sides. Also that square building off to the right. It's a hangar. If a plane takes off, shoot it down. If I don't signal in ten minutes, bomb the house."

"Right," the officer answered.

O'Meara crouched tensely on a trapdoor. "When you're ready," he said.

The officer's face was grave as he took hold of the release. "Good luck," he whispered, and jerked the lever.

O'Meara found himself plummeting head over heels through the clutching fingers of air. He found the rip-cord, jerked it, and waited breathlessly for the 'chute to open. The harness jerked him suddenly as the blossom of silk bloomed above him. He swung in decreasing arcs toward the ground. By drawing the cords, he slipped the 'chute toward the house.

A blast of thunderous sound burst through the still morning air. He turned to see a geyser suddenly spouting on the road. The plane banked, turned, and another blast followed the descent of two silver projectiles from the belly of the plane.

Figures appeared in front of the house, running frantically toward the hangar. But as the plane neared, they stopped, again sought the shelter of the house. The hangar exploded, shooting debris high into the air.

O'Meara unbuckled the straps of his 'chute before he reached the ground. He touched the ground, scraped along before he could free himself. Then he was running, gun in hand, toward the house. He gained the entrance unseen, paused to get his breath. From the front part of the house came the excited cries of men. O'Meara raced toward them.

THERE were two men in the front entrance—two men who spun to face O'Meara at his sharp command. One of them was a huge, hulking figure, apelike. His eyes, under bulging, shaggy brows, were small and cruel. The other man, neat and dapper, but white of face at this sudden bombardment, was Stanely Westmoreland.

O'Meara breathed a prayer of thanks. He had been right in supposing the headquarters for the invaders was the country estate of Westmoreland.

"O'Meara!" Westmoreland gasped, his face graying in sudden fear. "Where? How?"

"In spite of the way you fixed that port on the sphere," O'Meara said softly, "we got down there and we got back."

O'Meara had been too intent on watching Westmoreland. He realized that an instant too late. The apelike man had produced a niter-gun. O'Meara leaped desperately to one side when he saw the small, blue flame flicker at the gun barrel. He fingered the trigger of his own gun as he fell, felt the gun quiver as he fired.

Behind him, the projectiles from the ape-man's gun exploded in a continuous roar. They blended with the sound of his own bullets. A sweeping river of pain caught O'Meara's left side, seared him, convulsed him, as he rolled out of the line of fire. He tried to lift his own gun and found that he lacked the strength.

He waited for the white flash of

oblivion that would mean the end. He waited while the flames started by the bullets spread to a roaring hell. The pain brought fingers of darkness to clutch at his brain.

It seemed to him, in that moment, that he could see the face of the girl in Atlantis, could hear her voice pleading for him to get up. Dimly, at first, and then more clear, until finally it was so clear that he talked to her.

With her there to urge him on, he forced his eyelids open. He saw why the ape-man had not fired again. He was no more than a butchered mass of flesh, torn to bits by O'Meara's desperate firing.

Westmoreland lay supine beside him, but he was not dead yet. Queer, bubbling screams were coming from his open mouth. He rolled from side to side, clutching the bloody stump of his arm.

The flames were blazing higher and dangerously close to O'Meara. The intense pain, and the urgings of Anoa gave him strength enough to drag himself to his knees and to crawl toward Westmoreland. Crouching there beside the screaming figure, he dug the fingers of his good hand deep into Westmoreland's throat. The screams throttled off. The smaller man's eyes opened.

He stared at O'Meara, crazed with fear and racked with pain.

"Get up!" O'Meara raved insanely. "Get up, damn you! Take me to your broadcaster!"

Westmoreland babbled incoherent pleas for mercy, moaned that he was too badly hurt to move. But under the threat of the gun muzzle against his teeth, and the vivid hell smoldering in O'Meara's eyes, he staggered up and led the way through the house.

The broadcasting machine came to life under O'Meara's fumbling fingers. He jammed Westmoreland into position in front of the scope.

"Now, damn you!" O'Meara roared. "Tell them. Tell them that you're the one who dropped the hail, and not the Atlantides. Tell them you stole the formula; that you are the Face; that you were going to be the one the Face selected. Tell them everything!"

AND Westmoreland told all. Driven by the terrible fury in O'Meara's eyes he told that and more. The entire fiendish plot spilled from his lips to echo from millions of news-screens throughout the world.

And the plot had been mad—to kill millions to revenge the humiliation, the laughter and the disgrace thrown at him when he had announced the discovery of Atlantis, to fulfill his desire to be supreme among men. But the plot had not been mad in the possibility of its success. It had been so utterly simple, success had been almost a certainty. A certainty he could not resist.

From this very broadcaster he had sent out the ultimatum of the Face. His plan had been to make himself the representative of the Atlantides, to give himself the authority of an all-powerful ruler. For this he would have appeared blameless, for had not the Face said that his refusal to accept the position would mean his death?

Then, feeling certain that the navy would destroy the city of Atlantis, he would have been safe from the danger

of the Atlantides disclaiming him or the responsibility of the attack. He could have gone on indefinitely, shifting all blame for the orders he might have issued to the Atlantides.

After the last words had passed his lips, he crumpled into an inert, moaning heap across the machine. O'Meara caught him and dragged him from the house.

There had been a darkness growing inside O'Meara's brain through the last minutes. A darkness that closed in solidly as he reached the yard. And in that darkness, quite plainly now, he seemed to see the face of Anoa. She was smiling happily at him, through moisture in her eyes.

O'Meara did not hear the whine of the sub-stratoplane as it dropped beside him. He was talking to Anoa, telling her that they had stopped the attack, that the conquest was over. He promised to come back to her as soon as he was well again. She seemed to nod, smiling, and O'Meara knew that nothing—nothing in the world could keep him from going back to the city of Atlantis.

COMING NEXT MONTH

DICTATORS OF CREATION

A Novelet of a Stolen Scientific Secret

By EDMOND HAMILTON

College Humor

13

THE BEST COMEDY IN AMERICA

FICTION • SATIRE • CARTOONS

ON SALE EVERYWHERE

BEAUTY AND THE BEAST

By HENRY KUTTNER

Author of "Hollywood on the Moon," etc.



More planes came, wounding the Beast with bombs

Out of Rain-Swept Venus' Gift to Sun-Drenched Earth Comes Life—and Death!

JARED Kirth saw the meteor as he lay under the pines, staring up at the stars. He was on the verge of slumber, and the sleeping bag that wrapped his lean body was warm and comfortable.

Kirth was feeling well satisfied with himself, his stomach bulged with crisp, freshly-caught trout, and there was still a week left of the fortnight's vacation he had allowed himself. So he lay quietly, watching the night sky, and the meteor shrieked its death agony in that last incandescent plunge through the atmosphere.

But, before it went out of sight, the luminous body seemed to turn and arc

in midair. That was queer enough. And even stranger was the shape of the thing, an elongated ovoid. Vaguely recalling that meteors sometimes contained precious ores, Kirth marked the spot where the flaming thunderbolt fell beyond a high ridge. And the next morning he shouldered his fishing tackle and hiked in that direction.

So, he found the wrecked spaceship. It lay among the pines, a broken giant, its hull fused in many places by the heat of friction.

Kirth's pinched, rather mean mouth tightened as he looked down at the vessel. He was remembering that two months before a man named Jay Arden had left the Earth on the first interplanetary voyage.

Arden had been lost in space—so the papers had said. But now, apparently, his ship had returned, and Kirth's gaunt, gray-stubbed face was eager as he hastened down the slope.

He walked around the ship, slipping on sharp rocks and cursing once or twice before he found the port. But the metal surrounding it had fused and melted, so that entry was impossible at this point. The gray, pitted, rough metal of the craft defied the tentative ax-blows Kirth gave it. Curiosity mounted within him.

He examined the ship more closely. The sun, rising above the eastern ridge, showed a factor he had previously overlooked. There were windows, circular deadlights, so fused and burned that they were as opaque as the metallic hull. Yet they were unmistakably of glass, or some similar substance.

It was not ordinary glass. It did not shatter under the ax. But a small chip flew, and Kirth battered away diligently until he had made a small hole. Vapor gushed out of this, foul, stale and mephitic, and Kirth fell back and waited.

Then he returned to his labors. The glass was easier to shatter now, for some reason, and it was not long before Kirth had chopped away a hole large enough to permit the entry of his lean body. First, however, he took a small flashlight from his belt and held it at arm's length within the ship.

There was but one room, and this was a shambles. It was a mass of wreckage. Yet the air had cleared, and there seemed to be no danger. Cautiously Kirth squirmed through the deadlight.

So this was a spaceship! Kirth recognized the chamber from newspaper pictures he had seen months before.

In 1942 the ship had been new, shining, and perfect. Now, only a few months later, it was a ruin. The controls were hopelessly wrecked. Metal kits and canisters were scattered about the floor, broken straps on the walls showing whence they had fallen. And on the floor, too, lay the body of Jay Arden.

KIRTH made a useless examination. The man was dead. His skin was blue and cyanosed, and his neck was obviously broken. Scattered about his corpse were a few cellulose-wrapped parcels that had spilled from a broken canister near by. Through the transparent envelopes Kirth detected small black objects, smaller than peas, which resembled seeds.

Protruding from one of Arden's pockets was a notebook. As Kirth drew it forth, a wrapped parcel fell to the floor. Kirth hesitated, put the notebook aside, and opened the package.

Something fell from it into his palm. The man gasped in sheer wonder.

It was a jewel. Oval, large as an egg, the gem flamed gloriously in the light of the electric torch. It had no color, and yet seemed to partake of all the hues of the spectrum. It seemed to draw into itself a thousand myriad hues—men would have died for such a jewel. Lovely it was, beyond imagination, and it was—unearthly.

Finally Kirth tore his gaze from the thing, and opened the notebook. The light was too dim, so he carried it to the broken deadlight. Arden, seemingly, had not kept a diary, and his notes were broken and disconnected. But from the book, several photographs fluttered, and Kirth caught them as they fell.

The snapshots were blurred and discolored, but certain details showed

with fair clarity. One showed a thick bar, with rounded ends, white against blackness. This was a picture of the planet Venus, taken from outer space, though Kirth did not realize it. He examined the others.

Ruins. Cyclopean, strange, and alien in contour, half-destroyed shapes of stone were blurred against a dim background. One thing, however, was clear. The spaceship was visible in the picture—and Kirth gasped.

For the great ship was dwarfed by the gigantic ruins. Taller than the vast Temple of Karnak, monstrously large were the stones that had once been cities and buildings. Vague and murky as the pictures were, Kirth managed to form some conception of the gargantuan size of the structures shown in them. Too, he noticed that the geometry seemed oddly wrong. There were no stairs visible, only inclined planes. And a certain primeval crudeness, a lack of the delicacy noticeable even in the earlier Egyptian artifacts, was significant.

Most of the other photographs showed similar scenes. One, however, was different. It depicted a field of flowers, such flowers as Kirth had never before seen. Despite the lack of color, it was evident that the blossoms were lovely with a bizarre, unearthly beauty. Kirth turned to the notebook.

HE learned something from it, though not much. He read:

"Venus seems to be a dead planet. The atmosphere is breathable, but only plant life exists. The flowers, somewhat resembling orchids, are everywhere. The ground beneath them is covered with their seeds. I have collected a great many of these. . . .

"Since I found the jewel in one of the ruined structures, I have made another discovery. An intelligent race once lived on Venus—the ruins themselves denote that fact. But any inscriptions they might have left have been long since eroded by the foggy, wet atmosphere and the eternal rains. So I thought, till this morning, when in a subterranean chamber I discovered a bas-relief almost buried in mud.

"It took me hours to clear away the muck, and even then there was not

much to see. But the pictures are more significant than any inscription in the ancient Venusian language could have been. I recognized, quite clearly, the jewel I previously discovered. From what I have been able to make out, there were many of these, artificially created. And they were something more than mere gems.

"Unbelievable as it seems, they are—to use a familiar parallel—eggs. There is life in them. Under the proper conditions of heat and sunlight—so I interpret the bas-reliefs—they will hatch. . . ."

There were a few other notes in the book, but these were technical in nature and of no interest to Kirth, save for one which mentioned the existence of a diary Arden had kept. He again searched the ship, and this time found the diary. But it was half incinerated by its proximity to the fused port, and utterly illegible.

Pondering, Kirth examined the various containers. Some were empty; others had dusty cinders in them, and emitted a burnt, unpleasant odor when opened. The spoils of Arden's voyage were, apparently, only the seeds and the jewel.

Now, Jared Kirth, though shrewd, was not intelligent in the true sense of the word. Born on a New England farm, he had fought his way up by dint of hard, bitter persistence and a continual insistence upon his own rights. As a result, he owned a few farms and a small village store, and permitted himself one brief vacation a year. On this furlough neither his wife nor his daughter accompanied him. He was fifty, a tall, spare, gray man, with cold eyes and a tight mouth that was generally compressed as though in denial.

It is scarcely wonderful, therefore, that Kirth began to wonder how he might turn this discovery to serve his own ends. He knew that no reward had been offered for the finding of the spaceship, supposedly lost in the airless void. If there had been treasure of any sort in the vessel, he would have appropriated it, on the principle of "finder's keepers." There was nothing, save for the seeds and the gem, and Kirth had these in his pockets as he left the vessel.

The ship would not be found for some time, since this was wilderness country. Meanwhile, Kirth took with him Arden's notebook, to be destroyed at a more opportune moment. Though skeptical, he thought more than once of Arden's comparison of the jewel with an egg, and, for a man who owned several farms, the conclusion was inevitable. If this "egg" could be hatched, despite the unlikelihood of the idea, the result might be interesting. Even more—it might be profitable.

KIRTH decided to cut short his vacation, and two days later he arrived at his home. He did not stay there, however, but went to one of his farms, taking with him his wife and daughter.

Heat and sunlight. A topless, electrically warmed incubator was the logical answer. At night, Kirth used a sunlamp on the jewel. Meanwhile he waited.

Intrinsically the gem might have value. Kirth could, perhaps, have sold it for a large sum to some jeweler. But he thought better of this, and planted some of the Venusian seeds instead.

And, in the strange jewel, alien life stirred. Heat warmed it—heat that did not now exist on gloomy, rain-swept Venus. From the Sun, poured energy, cosmic rays and other rays that for eons had been barred from the stone by the thick cloud-barrier that shrouded Venus. Into the heart of the gem, stole energy that set certain forces in motion. Life came, and dim realization.

There, on the straw of a filthy incubator, lay the visitant from another world. Unknown ages ago, it had been created, for a definite purpose. And now—life returned.

Kirth saw the hatching. At midday he stood beside the incubator, gnawing on a battered pipe, scratching the gray stubble on his jaw. His daughter was beside him, a lean, underfed girl of thirteen, with sallow skin and hair.

"It ain't an egg, Pa," she said in a high, nasal voice. "You don't really expect that thing to hatch, do you?"

"Hush," Kirth grunted. "Don't

keep pestering me. I—hey! Look at that thing! Something's—"

Something was indeed happening. On the straw the jewel lay, flaming bright. It seemed to suck sunlight into itself thirstily. The dim radiance that had come to surround it of late pulsed and waned—pulsed once more. The glow waxed—

Waxed brighter! An opaque cloud formed suddenly, hiding the gem. There came a high-pitched tinkling sound, almost above the threshold of hearing. It faded and was gone.

The gray mist fled. Where the jewel had been was nothing. Nothing, that is, save for a round, grayish ball that squirmed and shuddered weakly. . .

"That ain't a chick," the girl said, her jaw hanging. "Pa—" There was fright in her eyes.

"Hush!" Kirth said again. He bent down and gingerly prodded the thing. It seemed to writhe open, with an odd motion of uncoiling, and a tiny creature like a lizard lay there, its small mouth open as it sucked in air.

"I be damned," Kirth said slowly. "A dirty little lizard!" He felt vaguely sick. The jewel he might have sold at a good price, but this creature—what could be done with it? Who could want it?

Yet it was strange enough. It was shaped like a miniature kangaroo, almost, and like no lizard Kirth had ever seen before. Perhaps he might sell it after all.

"Go git a box," he said to his daughter, and, when she had obeyed, he picked up the reptile gingerly and deposited it in the impromptu prison.

AS he carried it into the house, he glanced at the plot of ground where he had planted some of the seeds. A few yellowish, small spears were sprouting up. Kirth nodded approvingly and scratched his jaw.

Mrs. Kirth, a plump, slatternly woman, approached. Her face was prematurely old, sagging in fat wrinkles. Her brown eyes had a defeated look, though there was still something of beauty in them.

"What you got there, Jay?" she asked.

"Tell you later," he said. "Git me

some milk, Nora. And an eye-dropper or something."

This was done. Kirth fed the reptile, which seemed to like the milk and sucked it down greedily. Its small, glittering eyes stared up unblinkingly.

"Pa," the girl said. "It's bigger. Lots bigger."

"Couldn't be," Kirth said. "Things don't grow that fast. Git out, now, and leave me be."

And, in its prison, the tiny creature that was to become the Beast, drank thirstily of the milk, while in the dim, alien brain, clouded by the mists of centuries, thoughts began to stir. The first faint chords of memory vibrated. . . . memory of a previous life, half forgotten. . . .

Kirth's daughter had been right. The reptile grew, abnormally and alarmingly. At the end of the second day, it was six inches long from blunt muzzle to tapering tail. When the week was over it was more than twice as large. Kirth built a pen for it and was secretly elated.

"I can sell it, all right," he exulted. "Some circus'd pay me plenty. But it might git even bigger. I'll wait a bit."

Meanwhile he tended his Venusian plants. They were sprouting most satisfactorily now, and the beginnings of buds were evident. They were as tall as hollyhocks, but leafless. The thick, rigid stem, pale yellow in hue, was studded with swellings that presently burst into bloom.

At the end of the second week Kirth's garden was a riot of color, and he paid a photographer to take snapshots in color. These he sent to several horticultural gardens, which were immediately interested. A reporter got on the trail, and interviewed Kirth.

Kirth was wary and spoke of plant-grafting and experiments he had made. A new species of flower, it was, and he had grown them. Yes, he had some seeds, and would sell them. . . .

The wrecked spaceship had not yet been discovered. And in its sty the Beast ate enormously of vegetables, and of swill which Kirth refused the reluctant hogs, and drank anything it

could get. A scientist would have known, by the shape of the Beast's teeth, that it was carnivorous or at least omnivorous, but Kirth did not know, and the reptile did not appear to object to its menu. It grew, remarkably, and its basal metabolism was so high that its scaly body emitted perceptible heat.

It was as large, now, as a stallion. But it seemed so gentle that Kirth took no warning, though he kept a revolver in his pocket whenever he approached his bizarre charge.

THE dim memories within the Beast's brain stirred into life from time to time. But one factor predominated, drowning them and lulling them to slumber. The Beast knew, somehow, that it was necessary for him to grow. Before anything else, he must attain his full growth and maturity. After that—

The Beast was intelligent, not with the aptitude of a child, but with the mind of a half-drugged adult. And he was not born of Earth. The alien chemistry of his body sent unknown secretions coursing through his veins, and, as he ate and grew, that strange mind worked. . . .

The Beast learned, though as yet he could not take advantage of his knowledge. The Kirths' conversation was clearly audible to him through the open windows of the farmhouse, and their televisor was very often turned on. From observing the humans, he grew to recognize their moods, and in turn came to associate certain word-sounds with those moods.

He learned that certain grimaces accompanied a special set of emotions. He grew to understand laughter and tears.

One thing he did not understand—a look that came into the eyes of Mrs. Kirth and her daughter, and sometimes into Kirth's eyes, as they watched him. It was repugnance and horror, but the Beast did not know that.

Two months passed slowly. Kirth received many checks in his mail. The new flowers had proved tremendously popular, and florists demanded them avidly. Lovelier than orchids

they were, and they did not fade for a long time after being cut.

Kirth was not shrewd enough to keep control of the plants in his own hands, and the distribution of them got beyond him. Since the flowers would flourish in any climate, they were grown from California to New York. Fields of them formed a carpet of beauty over America. The fad spread over the world, and in Buenos Aires, London, or Berlin no socialite attended a *dansant* without a corsage of of the Rainbows, as the blooms came to be called.

Kirth might have been satisfied with his growing bank account, but he had already got in touch with the owners of several circuses, and told them he had a freak to sell. Kirth was becoming apprehensive. The Beast was uncomfortably huge, and people were noticing that scaled, swaying back as it moved about. Kirth, with some trepidation, led the monster into the barn, though it followed willingly enough. But the quarters were cramped. One blow from the mighty tail would have wrecked the structure, and that was scarcely a pleasant thought.

Kirth would have been even more disturbed had he realized what was going on in the monster's brain. The fogs were dissipating as the Beast approached swift maturity. Intelligence and memory were returning. And already, the creature could understand many English words.

That was natural enough. A child does the same, over a period of years, by a process of association, experiment, and mental retention of wordsounds. The Beast was not a child. He was a highly intelligent being, and for months he had been in close contact with human beings. At times, he found it hard to concentrate, and would devote himself to feeding and sleeping, in a dull, pleasantly languorous stupor. Then, the driving, inexorable force within him would awaken him to life once more.

It was hard to remember. The metamorphosis he had undergone had altered the psychic patterns of his mind to some degree. But one day he saw, through a crack in the barn, the

Venusian flowers, and by a natural process of association thought of long-forgotten things. Then a dull, gray, rainy day occurred. . . .

Rain. Chill, bleak water that splashed on his scaled hide. Thick fogs, through which structures reared. And among those stone buildings moved beings like himself. The Beast remembered. . . .

The hideous, armored head swayed in the dimness of the barn. The saucer eyes stared into vacancy. Tremendous and frightful, the Beast crouched, while its thoughts went far and far into the dusty ages of the past.

Others. There had been others like itself, the ruling race of the second planet. Something had happened. Death . . . doom. Many had died. All over the rain-swept, twilight world the mighty reptiles had perished. Nothing could save them from the plague that had come from outer space.

The vast hulk shuddered uneasily in the gloom.

NO escape? Yes, there had been one. Despite the beast form of the creatures, they had been intelligent. And they had possessed science of a kind. It was not Earthly science—but it had found an escape.

Not in their own forms. Nothing could protect the huge reptilian bodies from the plague. But in another form . . . a form in which the basic energy-patterns of their bodies would remain unaltered, though compressed by the creation of atomic stasis.

Matter is not solid. Bodies are formed of incredibly tiny solar systems, electrons that swing in wide orbits about their protons. Under the influence of cold this sub-microscopic motion is slowed down, and at the point of absolute zero it ceases. But absolute zero means the cessation of all energy, and is impossible.

Impossible? Not on Venus, ages ago. As an experiment the life-energy had been drained from one of the reptiles. As the electrons drew in toward their protons, there had been a shrinkage . . . and a change. A jewel of frozen life, an entity held in absolute stasis, lay before the Venusian scientists, waiting for the heat

and solar rays that would waken it to life once more.

Space travel, to those bulky and gigantic forms, was impossible. But if, in different guise, they could flee to another, safer world. . . .

That had been the plan. All the energies of the Venusian survivors were turned toward constructing a spaceship. In this vessel the life-gems were to be stored, and, as soon as possible, automatic robot controls would guide the craft across space, to Earth. Once a safe landing had been effected, other robot apparatus would expose the jewels to sunlight and heat, and the Venusians would live again after their cataleptic voyage across the void. But the plan had not been completed. The plague was too deadly. The spaceship's unfinished ruins still lay hidden deep in a Venusian swamp, and it had been an Earthman, after all, who had brought one of the strange jewels to his own world.

All over Venus the gems were hidden. The Beast had seen the night sky, and learned that he was on the third planet. That meant he had been brought here from his own world, and revived by the energizing rays. He felt gratitude to the Earthmen who had rescued him from eternal life-in-death.

Perhaps, he was not the only one. Perhaps, others of his race existed here, on Earth. Well, he would communicate with these humans, now that the fogs were clearing from his brain. Strange creatures they were, bipeds, and hideous to the Beast's alien eyes. But he was grateful to them, nevertheless.

How could he communicate? The Earthmen were intelligent, that was evident enough. His own language would be incomprehensible to them, and though he could understand English after a fashion, his throat and tongue could not form recognizable words. Well, mathematics was a universal language, and that could be the beginning. There was something he must tell Earthmen—something vitally important. But they were the ruling race on this planet, and it would not be difficult to establish communication with them.

THE Beast moved clumsily. His body lurched against the wall of the barn and, with a crackling crash, timbers gave way. The big structure sagged down, and as the Beast drew back in dismay he completed the job of ruin. He stood amid the wreck of something that no longer resembled a barn. Impatiently, he shook it off. Things on this world were delicate indeed. The heavy stone structures of Venus were built to withstand normal shocks.

The noise had been heard. Kirth came running out of the farmhouse, carrying a shotgun and holding an electric torch. His wife was beside him. They started toward the barn, and then paused, apprehensive.

"It—it tore it down," Mrs. Kirth said stupidly. "Do you think it'll—Jay! Wait!"

But Kirth went forward, holding the gun ready. In the moonlight the gross bulk of the monster loomed hideously above him.

And the Beast thought: It is time. Time to establish communication. . .

A huge foreleg lifted and began to trace a design in the dirt of the farmyard. A circle formed, and another. In time, a map of the Solar System was clear.

"Look at the way it's pawing," Mrs. Kirth said. "Like a bull getting ready to charge. Jay—watch out!"

"I'm watching," Kirth said grimly. And he lifted the gun.

The Beast drew back, without fear, but waiting for the man to see the design. Yet Kirth's eyes saw only a meaningless maze of concentric circles. He walked slowly forward, his boots obliterating the design.

"He did not notice it," the Beast thought. "I must try again. Surely it will be easy to make him understand. In such a highly organized civilization, only a scientist would have been entrusted with my care."

Remembering the gesture of greeting among Earthmen, the Beast lifted a foreleg and slowly extended it. Shaking hands was fantastically impossible, but Kirth would recognize the significance of the motion.

Instead, Kirth fired. The bullet ripped along the Beast's skull, a pain-

ful though not dangerous wound. The Beast instantly withdrew its paw.

The man did not understand. Perhaps, it thought harm had been offered, had read menace in the friendly gesture. The Beast lowered its head in a motion of submission.

At sight of that frightful mask sweeping down, Mrs. Kirth broke through her paralysis of terror. She shrieked in an agony of fear and turned to flee. Kirth, yelling hysterical oaths, pumped bullet after bullet at the reptile.

The Beast turned clumsily. It was not hurt, but there was danger here. Attempting to escape without damaging the frail structures all around, it managed to step on a pig-sty, ruin a silo, and crush in one wall of the farmhouse.

But this could not be helped. The Beast retreated and was lost in the night.

The inhuman brain was puzzled. What had gone wrong now? Earthmen were intelligent, yet they had not understood. Perhaps the fault lay with itself. Full maturity had not been reached; the thought-patterns were still not set in their former matrices. The fogs that shrouded the reptile's mind were not yet completely dissipated. . . .

Growth! Maturity! That was necessary. Once maturity had been achieved, the Beast could meet Earthmen on equal terms and make them understand. But food was necessary. . . .

The Beast lumbered on through the moonlit gloom. It went like a behemoth through fences and ploughed fields, leaving a swathe of destruction in its wake. At first it tried to keep to roads, but the concrete and asphalt was shattered beneath the vast weight. So it gave up that plan, and headed for the distant mountains.

A shouting grew behind it. Red light flared. Searchlights began to sweep the sky. But this tumult died as the Beast drove farther and farther into the mountains. For a time, it must avoid men. It must concentrate on—food!

The Beast liked the taste of flesh, but it also understood the rights of

property. Animals were owned by men. Therefore they must not be molested. But plants—cellulose—almost anything was fuel for growth. Even the limbs of trees were digestible.

So the colossus roamed the wilderness. Deer and cougars it caught and ate, but mostly vegetation. Once, it saw an airplane droning overhead, and after that more planes came, dropping bombs. But after sundown, the Beast managed to escape.

It grew unimaginably. Some effect of the Sun's actinic rays, not filtered as on cloud-veiled Venus, made the Beast grow far beyond the size it had been on Venus eons ago. It grew larger than the vastest dinosaur that ever stalked through the swamps of Earth's dawn, a titanic, nightmare juggernaut out of the Apocalypse. It looked like a walking mountain. And, inevitably, it became clumsier.

The pull of gravity was a serious handicap. Walking was painful work. Climbing slopes, dragging its huge body, was agony. No more, could the Beast catch deer. They fleetly evaded the ponderous movements.

Inevitably, such a creature could not escape detection. More planes came, with bombs. The Beast was wounded again, and realized the necessity of communicating with Earthmen without delay. Maturity had been reached.

There was something of vital importance that Earthmen must know. Life had been given to the Beast by Earthmen, and that was a debt to be repaid.

The Beast came out of the mountains. It came by night, and traveled swiftly, searching for a city. There, it knew, was the best chance of finding understanding. The giant's stride shook the earth as it thundered through the dark.

On and on it went. So swift was its progress that the bombers did not find it till dawn. Then the bombs fell, and more than one found its mark.

BUT the wounds were superficial. The Beast was a mighty, armored Juggernaut, and such a thing may not be easily slain. It felt pain, however, and moved faster. The men in the sky, riding their air-chariots, did

not understand — but somewhere would be men of science. Somewhere.

And so the Beast came to Washington.

Strangely, it recognized the capitol. Yet it was, perhaps, natural, for the Beast had learned English, and had listened to Kirth's televisior for months. Descriptions of Washington had been broadcast, and the Beast knew that this was the center of government in America. Here, if anywhere on Earth, there would be men who understood. Here, were the rulers, the wise men. And, despite its wounds, the Beast felt a thrill of exultation as it sped on.

The planes dived thunderously. The aerial torpedoes screamed down. Crashing they came, ripping flesh from that titanic armored body.

"It's stopped!" said a pilot, a thousand feet above the Beast. "I think we've killed it! Thank God it didn't get into the city—"

The Beast stirred into slow movement. The fires of pain bathed it. The reptilian nerves sent their unmistakable messages to the brain, and the Beast knew it had been wounded unto death. Strangely it felt no hate for the men who had slain it.

No—they could not be blamed. They had not known. And, after all, humans had taken the Beast from Venus, restored it to life, tended and fed it for months.

And there was still a debt. There was a message that Earthmen must know. Before the Beast died, it must convey that message, somehow.

The saucer eyes saw the white dome of the Capitol in the distance. There could be found science, and understanding. But it was so far away!

The Beast rose. It charged forward. There was no time to consider the fragility of the man-made structures all around. The message was more important.

The bellow of thunder marked the Beast's progress. Clouds of ruin rose up from toppling buildings. Marble and granite were not the iron-hard stone of Venus, and a trail of destruction led toward the Capitol. The planes followed in uncertainty. They

dared not loose bombs above Washington.

Near the Capitol was a tall derrick-like tower. It had been built for the accommodation of newscasters and photographers, but now it served a different purpose. A machine had been set up there hastily, and men frantically worked connecting power cables. A lens-shaped projector, gleaming in the sunlight, was swinging slowly to focus on the oncoming monster. It resembled a great eye, high above Washington.

It was a heat ray.

It was one of the first in existence, and if it could not stop the reptile, nothing could.

Still the Beast came on. Its vitality was going fast, but there would still be time. Time to convey its message to the men in the Capitol, the men who would understand.

FROM doomed Washington arose a cry, from ten thousand panic-strained throats. In the streets men and women fought and struggled and fled from the oncoming monster that towered against the sky, colossal and horrible.

On the tower soldiers worked at the projector, connecting, tightening, barking sharp orders.

The Beast halted. It paused before the Capitol. From the structure, men were fleeing. . .

The fogs were creeping up to shroud the reptile brain. The Beast fought against increasing lassitude. The message—the message!

A mighty forepaw reached out. The Beast had forgotten Earth's gravity, and the clumsiness of its own gross bulk.

The massive paw crashed through the Capitol's dome!

Simultaneously the heat ray flashed out blindingly. It swept up and bathed the Beast in flaming brilliance.

For a heartbeat the tableau held, the colossus towering above the nation's Capitol. Then the Beast fell. . .

In death, it was terrible beyond imagination. The heat ray crumpled it amid twisted iron girders. The Capitol itself was shattered into utter ruin. For blocks buildings collapsed, and

clouds of dust billowed up in a thick, shrouding veil.

The clouds were blinding, like the mists that darkened the sight and the mind of the Beast. For the reptile was not yet dead. Unable to move, the life ebbing swiftly from it, the Beast yet strove to stretch out one monstrous paw. . . .

Darkly it thought: I must give them the message. I must tell them of the plague that destroyed all life on Venus. I must tell them of the virus, borne on the winds, against which there is no protection. Out of space, it came to Venus, spores that grew to flowers. And now, the flowers grow on Earth. In a month, the petals will fall, and from the blossoms the virus will develop. And then, all life on Earth will be destroyed, as it was on Venus, and nothing will exist on all the planet but bright flowers and the

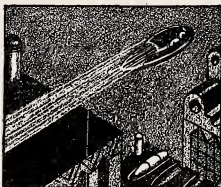
ruins of cities. I must warn them to destroy the blooms now, before they pollinate. . . .

The mists were very thick now. The Beast shuddered convulsively, and lay still. It was dead.

On a rooftop, a man and a woman watched from the distance. The man said: "God, what a horrible thing! Look at it lying there, like the devil himself." He shuddered and glanced away.

The white-faced woman nodded. "It's hard to believe the world can hold so much horror, and yet can give us anything as beautiful as this . . ." Her slim fingers stroked the velvety petals of the blossom that was pinned to her dress. Radiant, lovely, the flower from Venus glowed in the sunlight.

Already, pollen was forming within its cup.



Next Month: TOMORROW'S HERO, a Story of a Modern

Utopia by DON TRACY





Science Questions and Answers



STRAIGHT FALL IMPOSSIBLE

I read somewhere that if we could step off the Earth and step back again, while it moves in its orbit, we would travel 18½ miles a second. But how about any object that is allowed to drop? Why wouldn't it fall somewhere else than right below it?—R. S., Cincinnati, Ohio.

Because any object on the face of the Earth is moving with exactly the same speed of the Earth, and under the same gravitational pull as the Earth, it follows that when an object drops to the floor of the cabin of an airplane, going in a straight line at the rate of 300 miles an hour, follow the plane's. But, if the airplane started to turn while the object was still in the air inside it, the path of fall would be apparently changed.

Now the higher up any object is, the farther it is from the center of the Earth, and the greater the distance it covers in revolving around the center of the Earth in 24 hours. Therefore, when any object is dropped a perceptible distance, it is moving eastward (as the Earth turns) faster than the level to which it falls, and it will fall a little to the east. This was the first experiment ever performed which showed the revolution of the Earth.

If we could drop an object one mile, at the equator, it would fall to earth (disregarding air resistance) in 18 seconds. In this time the Earth would turn 1/4800 of the way round, or a little more than five miles. But the object, one mile above the Earth, is traveling 6,282 miles a day faster than the surface of the Earth (being in a circle two miles greater in diameter); and in the 1/4800-day while it is dropping, it would move east, with its original velocity, 6.9 feet further than the point which was originally below it. We can, therefore, say that no object naturally falls straight down toward the Earth.—Ed.

THE NERVOUS SYSTEM

I understand that it takes an appreciable amount of time for an impulse to travel through the nervous system. How long does the impulse take, say between the middle finger and the toe-tip, and is it possible to measure the speed accurately?—L. H. S., Chicago, Ill.

A great many experiments have been made on this point, with the aid of scientific instruments. Nervous impulses, though there is a certain amount of electricity in them, are chemical, rather than electrical. Their movement, therefore, is very much slower than that of electricity in a wire. While the speed is not uniform, thirty feet a second might be given as a good figure. The state of a person's health or his condition (asleep or awake), whether the nerve is a large or a

small one, etc., as well as his natural "tempo" must be considered.

The nerves of a successful boxer or ball player must work faster than those of an ordinary man. A cold-blooded animal has very slow nerve action. Also, the activity of a small animal is very great, since its nerve impulses have a very short distance to go. It is evidently not accidental that the eyes and ears, with their important messages, have been developed so close to the brain.

As for an impulse between a man's fingers and toes, there is no direct connection; a message would have to travel from one up the cable (the spinal cord) to the switchboard in the brain, be acted upon there, in accordance with the speed of brain processes, and sent down to the other part which it was desired to put in motion. It would take, say, a quarter of a second, at least. Of course, by the power of habit, the brain can give routine orders to take care of a situation, instead of special consideration of everything that comes up.—Ed.

BOMBING IN THE DARK

Apropos of the war situation of today, is it possible for airplanes to drop bombs on ships in the dark—and find their target? Also, how can torpedoes be aimed in darkness?—O. D., Kansas City, Kansas.

Airplanes can drop bombs unerringly in the dark, and torpedoes can be fired accurately—but it's done by remote control! The U. S. Government owns the secret of a torpedo which may be operated either from a fort or a ship. This torpedo cuts through the water submerged; in its shell there is a hole with a transparent covering, above a photoelectric cell. When this torpedo passes under a ship, it may be fired by the cell's response to the shadow above it. Or the control station, operating the torpedo, can throw a searchlight upon the enemy craft. When the torpedo has passed well under the hull of the hostile warship, the explosion takes place.

To prevent interference by the enemy with the torpedo mechanism, this is set to be responsive only to light flashed at a given frequency, to which the amplifier of the photo cell is tuned.

Airplanes could attack any body which might reflect a substantial amount of the searchlight's beams—and these beams would probably be of ultra-violet or other invisible light.—Ed.

COMPASS QUERY

It has just dawned on me that we speak of the north pole of the compass as the one pointing to the north pole of the Earth; yet how can this be when "like poles repel and unlike poles attract"?—A. V. E., New York City, N. Y.

The magnetism of the end of the needle which points to the north magnetic pole (not

(Concluded on page 128)

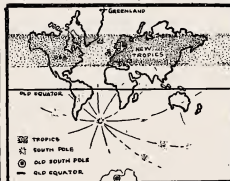
THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to promise an immediate answer in every case. However, questions of general interest will receive careful attention.

IF

EARTH'S AXIS SHIFTED.

Jack
Binder

THE NINE PLANETS WILL SOME DAY BE LINED UP IN A STRAIGHT ROW, WHEN THEIR ORBITS PLACE THEM IN THAT COMMON LINE. THIS MIGHT CONCEIVABLY PLACE A STRAINED GRAVITATIONAL FIELD AROUND EARTH, SHIFTING ITS AXIS, GRADUALLY BUT STEADILY. ASTRONOMERS ARE PUZZLED. THE STARS ARE OUT OF THEIR AGE-OLD PLACES. THE AMAZING TRUTH KNOWN, FRIGHTFUL ATMOSPHERIC CHANGES ARE PREDICTED. SHORTLY AFTER, VIOLENT STORMS AROSE OVER EARTH. MANKIND QUAILS BEFORE STUPENDOUS TIDAL WAVES AND TORNADOES THAT LASH ALL LANDS.

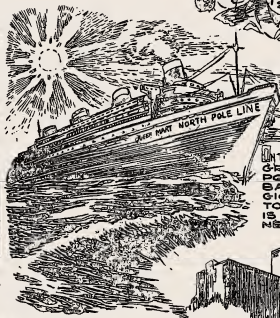


THE PEOPLE OF AMERICA AND EUROPE FIND THEIR LANDS STEADILY GROWING WARMER. MASS MIGRATIONS ARE UNDERTAKEN TO AFRICA AND SOUTH AMERICA, WHICH GROW COOLER. LONDON, PARIS AND NEW YORK SWELTER IN EQUATORIAL HEAT.

NEXT MONTH: IF THE WORLD WE



MASTY MEASUREMENTS SHOW, AFTER THE SHIFT IS COMPLETE, THAT ALL AMERICA IS NOW IN THE TROPIC ZONE. A PARALYZED, HEAT-RIDDEN NEW YORK CITY FINDS ITSELF SQUARELY ON THE NEW EQUATOR.



IN THE FAR NORTH, SIBERIA, GREENLAND AND ALL THE POLAR LANDS BECOME BALMY PLEASANT REGIONS. SETTLERS SWARM TO THEM. THE NORTH POLE IS AT THE CROSSROADS OF NEW AND BUSY SHIP LINES.

ANTARCTICA, ONCE THE BITTEREST OF ALL LANDS, EMERGES FROM ITS ICY PRISON. NOW IN A TEMPERATE, FAVORABLE CLIMATE, WITH VIRGIN STORES OF COAL AND METAL ORE, IT ATTRACTS MILLIONS. ANTARCTICA BECOMES THE NEW CENTER OF CIVILIZATION.





Pete Manx

SCIENCE IS GOLDEN

A Pete Manx Story

By
KELVIN KENT

Author of "Roman Holiday," "World's Pharaoh," etc.

THE taxi screeched to a stop before Plymouth University. Pete Manx bounced out and thrust a bill at the driver. Up the steps he scuttled, casting a terrified glance down the street.

He jammed his derby down on his bullet head and shot through the portals of learning, orange tie and breezy check coat-tails flapping in the breeze he created. His squat figure rocketed along the hall, caromed off a star quarterback, zoomed around a red-headed sophomore co-ed, and vanished into the laboratory of Dr. Horatio Mayhem.

"Doc!" yelled Pete, skidding to a halt just short of a dangerous looking rheostat. "I done you some favors. Now you gotta help me. I gotta take a powder—fast!"

Dr. Mayhem, conversing at the moment with a colleague, was lean and scrawny. Bending over like a startled stork, he scrutinized Pete as he might examine a strange growth on a dog's hind leg.

**Pete Manx Visits the
Days of Robin Hood and
Proves That the Arrow Is
Mightier Than the Sword!**

"Ah, Pete," he said at last. "I thought you were in New York. What's all this about a powder? I'm not a physician, you know."

Mr. Manx clutched his friend's lab smock despairingly. His face worked with anxiety. He looked somewhat like a schizophrenic gorilla.

"You don't get it," he babbled. "I gotta scram. Blow. Go up the pipe."

Still Mayhem did not understand. He looked vaguely around in search of a possible pipe. Pete sought frantically to express himself.

"I've got to—to go away," he managed, in triumphant relief.

Mayhem was not helpful. "All right, go away," he said. "Good-by."

Pete was galvanized into a fresh outburst.

"Doc, I'm on the spot. They got the finger on me. Moratti and his gang are out rodding for my hide!"

The gentleman to whom Mayhem had been talking suddenly intervened. He was large, overwhelming, with pince-nez and a Captain Bligh stare.

"Calm down and talk English!" he snapped. "Now, what is this all about?"

PETE glared at Professor Aker, and was promptly glared at in return. They were not good friends, having carried on a feud that commenced in the days of the Roman Empire.



The executioner who held Pete sprang high, an arrow in his throat

Pete drew a deep breath, however, and glanced apprehensively at the door.

"Well, I—uh—got in a crap game last night. With Moratti. See? And I cleaned him out. Made twenty-eight passes." Pete had the grace to blush. "Took him for his roll, thirty-three slot machines, and a ten percent interest in his model airplane factory."

"Mile-away Moratti makes model airplanes?" Mayhem blurted.

"Sure. A racketeer has to have a legit business, so's he can show the Federal boys where he gets his dough. Moratti manufactures toy airplanes. But don't ever let on you think it's pantywaist. He'll murder yuh." Pete suddenly remembered his plight. "That reminds me. Last night, Moratti grabbed the dice after we was through and looked 'em over. They—" He stopped.

"I see. I suppose Moratti found you'd been cheating."

"It's a lie!" Pete said with righteous indignation. "It was a frameup. But Moratti's after my scalp. A big shot like him could knock me off and get away with it, easy. So's he trailed me out here an' he'll take me for a ride, unless—"

"I'll phone the police," said Professor Aker.

Pete emitted a short, sharp cry.

"Keep the bulls out o' this! Anyhow, it's too late. Moratti'll be here any minute. Only thing'll save me is a hideout."

Mayhem considered, then raised his head brightly.

"Doubtless you could elude Mr. Moratti for a time in the university's halls."

"That ain't the answer, Doc. You

can fix me up with the best hideout ever thought of. Just send me back in time, like you done before. Lemme duck back a few hundred years till the heat's off."

"What good would that do? You couldn't stay in the past permanently."

"Look. You shoot my brain into time, don't you? My body stays here, but I ain't in it. So it looks like a stiff, don't it? Okay. When Moratti shows, let him look at me. Tell him I had heart failure or something. If he figures I've kicked the bucket, he'll give up. Catch?"

"It might work," said Mayhem slowly. "I can send you back in time. At least I can send back your consciousness, your *id*, as I've done before. My experiments have shown—"

Pete wasn't listening to the impromptu lecture. He was slyly inserting a small parcel into the coat pocket of Professor Aker, who didn't notice.

"The truth of certain broad principles. These things we may postulate—"

"Attaboy, Doc." Pete slid into one of two familiar seats that unpleasantly resembled electric chairs. "Turn on the juice."

MAYHEM made certain adjustments on the surprisingly uncomplicated time machine. Generators generated, converters converted, tubes glowed. The doctor continued his monologue, unaware of Aker's gaping yawn of boredom.

"First, our conception of time is the Einsteinian closed circle. It is, so to say, a wheel, with a central universal time consciousness as the hub. My apparatus frees an individual's time sense, allowing it to travel to the central consciousness. From there it may travel outward again to any era, as on the spokes of a wheel.

"The individual identity is bound by the time sense only while it inhabits a physical body. Once the identity is freed, it is magnetically attracted to the center of this cosmic wheel where time, as such, does not exist.

"It cannot remain there, however. Impetus, or perhaps a psychic form of

centrifugal force, sends it on to the rim of the wheel in another time sector. There it enters the mind of someone existing at that particular period. By creating this psychic energy field—"

"Oh, come!" Aker said wearily. "I've heard all that before."

Mayhem proceeded to create the psychic energy field. High potential arcs crackled. The smell of ozone became strong.

Pete Manx abruptly assumed a corpse-like aspect. He ceased to breathe. His eyes bulged glassily. His jaw dropped toward the ghastly orange tie. His rotund body sagged in the chair.

"Good," said Mayhem, switching off the juice. "He's back in some other period now."

The door opened. The diabolical Mr. Moratti entered. Moratti was dark and muscular and very competent looking. Someone in the past had tried to carve a Sanskrit inscription on his face with the point of a dagger. Dr. Mayhem grew hysterically cordial.

"Mr. Moratti, I presume? The racketeer?"

"I'm Moratti, model plane manufacturer, bud. See?" Moratti corrected the savant. "I'm looking for a tramp named Manx. See?"

Mayhem had seen some tough customers in his time, especially that left tackle Plymouth had stolen right out from under Columbia's nose. But they were sissies, he quickly decided, compared with Moratti. He stepped aside, revealing the body of Manx.

"So-o," growled Moratti. "You rat. . ."

He paused, scrutinizing his intended victim. It was all too obvious that Pete had become a singularly horrid looking cadaver.

"Stiff, huh?" Moratti said with a frightful oath. He glared at Mayhem and Aker. "Who bumped him?"

Mayhem shrugged. "Plain case of suicide. I was experimenting with electric charges when this man burst in and jumped into the chair, which closed the circuit. Lord knows why. I was just going to call the coroner."

MORATTI grunted. Bending over cautiously, he stared problemingly into the glassy eyes. With dangerous softness, he spoke.

"Maybe. And then again, maybe you know this Manx heel. Maybe he talked. Maybe a lotta things." He produced a squat blue-steel automatic, waved it menacingly. "This is a frisk."

He searched Mayhem first, finding nothing more significant than the less appetizing half of a dissected frog. But Aker's coat pocket gave up something that made Moratti stiffen. A packet of banknotes emerged. Moratti thumbed through them rapidly.

"So! Manx slipped you the dough, hey? Trying to pull a fast one? Or maybe you birds knocked off Manx for the dough, hey?"

Aker's beef-pudding face turned pale. He stuttered disclaimers. He hadn't known the money was in his pocket. He was ready to assure—

Moratti's forefinger dug in Aker's paunch.

"Fat stuff, you're comin' with me. And you," he glanced at Mayhem, "will keep your trap shut."

"D-do you intend to kill me?"

Moratti smiled horribly. "Naa. Just teach you a lesson." He drew a knife. "Not here, though. Some place where we won't be disturbed."

Aker stared at the knife, his flesh almost visibly crawling. The prospect of being carved into steaks was definitely unappealing. Though not usually a man of action, Aker this time made a quick decision.

He reeled realistically, then threw himself back into the chair beside the one which held Pete Manx' body. The surprised Moratti lunged, but Aker swiftly reached up and pulled the switch. There was a crackling flash of blue flame.

Aker stiffened, relaxed into apparent lifelessness.

Moratti, whose hand clutched the professor's arm, suddenly learned what it is to be a conductor of electricity. He, too, took the charge. Desperately he fought to get free as he felt his senses whirling. Instinct pulled the trigger of his gun as his

right arm flailed the air. Glass and metal smashed and rattled.

Woosh!

"Mile-away" Moratti slumped across Aker's knees. He had been taken for a ride—six hundred years into the past!

IN Pete Manx' brain, the whirling mists swiftly cleared away. He had a sudden sense of vertigo, very familiar to him. He swayed, regaining his balance just in time.

He looked around. In the distance lay meadows. Beyond, hemming him in, was a thick wood. Under his feet was a log and beneath the log rippled a fairly deep stream.

Pete closed his eyes, crossed his fingers and fervently hoped for a change of luck. In Rome he'd been an unsuccessful thief. In the days of the Pharaoh's he'd been a slave. Maybe this time he inhabited the body of a king, or at least a local big shot.

He glanced down at his attire. He groaned, though he felt like crying.

His clothing was of torn and ragged buckskin. His cap was a shapeless mess, his purse disgustingly flat. In his hands he gripped a large quarter-staff.

(There was only one consolation—his new body this time was a honey. He was tall and husky, a regular Tarzan. Pete wished Moratti were here now. Things would certainly be different. . . .

He had started on across the stream when a voice halted him with a sharp command.

"Hold, fellow!"

Hold what? Pete glanced up to see someone starting toward him on the log. The newcomer was a tall, slender, lithely muscled man dressed neatly in green.

"Hold yourself, mug," said Pete beligerently, conscious of his bulging biceps. "Back up and chase yourself. I was here first."

The other laughed, with a flash of white teeth.

"And you'll be first in the stream if you don't make way," he said cheerfully.

"Yeah? Who says so?"

"I declare thusly. Master O' Sherwood Forest am I, Robin Hood!"

Well! The guy didn't look much like Errol Flynn, but he ought to know who he was. And if he was Robin Hood, then this was fourteenth century England. Pete tried vainly to remember the picture he had seen quite a while back, or ahead, whichever way you want to look at it. About all he could salvage was something about Robin Hood meeting a musclem-an on a log. Little John, the name had been.

But Robin Hood, also holding a quarterstaff, was moving warily forward. He thrust it out.

"Learn, stranger, what it is to meet with a champion of the quarterstaff!"

Pete parried. With very unorthodox strategy, he jabbed Robin Hood on his corns. As the outlaw hopped in agony on one foot, another poke sent him sprawling off the log. There was a mighty splash.

Pete finished crossing the log, considerably gratified. He jumped on a grassy bank just as Robin Hood crawled out of the water. For a moment war clouds hovered. Then the brigand threw back his head and bel-lowed laughter.

"Swoonds! If I but blew this silver whistle at my belt, I'd have a score of my merry men here before you could escape. They'd beat you till your pelt was sore indeed, and hang you by yon oak, I doubt not. But I like you, friend. You did not blanch at the name of Robin Hood. Give me your hand on't."

Two calloused palms met in a firm grip.

"Okay, pal," Pete said, grinning.

ROBIN shook himself like a terrier, water cascading from his Lincoln green.

"Who are you?" he asked pleasantly. "How are you named?"

"Uh — Pete's the name. Peter Manx."

"A mere stripling, forsooth!" Robin took stock of the other's giant frame. "Little Peter. Ha! A good name for you, indeed. Are you serf or freed-man, esne or landholder?"

"Republican," said Pete, and fell to thinking. He had no idea how long he'd be marooned in this alien time sector. Meanwhile, he had to live. "Listen, Hood," he said at last. "Know where I can snaffle some chow—food, I mean? I'm hungry."

"You'll feast royally on venison," Robin Hood promised. "Venison belonging to Sir Guy of Gisbourne, may it turn to poison if he ever sinks his teeth in it. Come along. By your looks, you're neither nobleman nor usurer, and therefore probably as honest as I."

Along a well trodden path through the wood, Pete followed Robin Hood. They suddenly found themselves in a large clearing that swarmed with lean and hardy men dressed in green, and rang with good-natured oaths and laughter.

With a queer sensation of having been through it all once before, Pete was introduced to men bearing familiar names. Friar Tuck, fat and profane, begged divine forgiveness at every blasphemy. There was Will Scarlett. Alan-a-Dale strummed melancholy love tunes. And he met all the rest.

Almost immediately they sat down to eat at a long open-air table. The setup reminded Pete of a sheriff's barbecue.

Throughout a meal of succulent venison, wild fruits and nuts from the forest, and magnificent ale, Pete's brain took in all the information available. He turned it over and over like a squirrel in a cage. Characteristically, Pete was looking for an angle that would enable a wise lad like him to get along.

Robin Hood, plainly much taken with the newcomer, sounded Pete out on the idea of joining the outlaw band.

"Our only rule," he said, "is that all who join our merry throng must contribute a needed service. Something new."

"Well, let's get the picture," said Pete through a mouthful of pasty. "As I see it, this Sir Guy and his pals run the country. He is rolling the pork-barrel for his friends and slap-

ping huge taxes on John Q. Public." Robin Hood looked despairingly at Friar Tuck.

"You're a scholar," he appealed. "Know you whereof he speaks?"

Friar Tuck downed a stoup of ale before allowing his mind to work.

"Ha! He speaks strangely enow, but his meaning is clear. Aye, friend. Guy of Gisbourne, under the usurper John, rules England with a sword. He commits all the crimes in the calendar. No man's goods, property or wife can be left unguarded whilst he lives."

"Yeah. Like Chi in the good old days. And you're hi-jackers, huh?"

"We take only from the rich," said Robin Hood, "and give only to the poor."

"That's what we were doing back home. Well, you got a good racket. But you ain't organized. You need system. All you do is hide in Sherwood here and hi-jack anything that comes by. What you need is an efficiency expert. And I'm the guy for the job."

Robin Hood shook his head in bewilderment.

"What advantage will this—er—efficiency be to me and my merry men?"

"Make things easy," Pete explained. "You're risking a scrap every time with Sir Guy and his stooges, and the other nobles you knock off. Under the Little Peter system, see, they'll be glad to pay us a monthly stipend. Without argument. Without fighting. See?"

THE listening outlaws exchanged looks of worried amazement.

"He hath not the manner of a madman," Will Scarlett said doubtfully, "but—"

Robin Hood was overlooking no bets, however crazy they might seem.

"And how will you persuade Sir Guy of Gisbourne to part with a monthly contribution to outlaws' purses?" he asked.

Pete leaned back, grinning.

"The answer to that is simple, pal. We'll give him the old oil."

"Oil?"

"Yeah. Oil. That fishy stuff you burn in lamps. Oil."

At dawn, three days later, Little Peter, Robin Hood, and the tribe stood atop the highest hill in the vicinity. The outlaw was disguised, a patch over one eye and a shoddy yeoman's costume on his lithe frame.

"Don't forget," he warned, "call me Locksley. There's a price on Robin Hood's head."

"Don't let that bother you," Pete comforted. "Stick with me and you'll wear diamonds."

Robin Hood pointed out Sir Guy's castle, a towering battlemented structure of gray stone. It stood below them, not a quarter mile distant, though it rose above the surrounding plain. A hard-baked dirt road, from which heat shimmers rose, stretched from their feet toward the village of Nottingham, beyond the castle.

Pete, in his new body, wasn't even panting when the outlaws climbed the knoll and reached the moat. A drawbridge was presently lowered over the circle of scummed, putrid water. Pete and Robin Hood strode across the resounding planks. At the bastioned gate, a sentry in chain mail roused himself to present his pike.

"The tradesmen's entrance is at the back," he grunted.

Robin Hood took from his tunic a small leathern bag that clinked.

"We have important business with Sir Guy of Gisbourne." He rattled the coins suggestively. "Eh?"

The bag disappeared and the sentry also vanished. After a moment, a huge, tough looking customer appeared, as big as Pete himself. The newcomer was richly but sloppily dressed. By the appearance of his neatly trimmed beard, he'd had eggs for breakfast.

"I am Guy of Gisbourne," the man growled. "And who are you?"

"Glad to know you," Pete said, professionally cordial. "We got business to talk over with you. We want to do you a favor—"

The lord scrutinized them nastily.

"Do you think I need help from such tattered beggars as you two?" he broke in jeeringly.

"We're incognito," Pete explained with an air of great patience. "We represent the Sherwood Mutual Insurance and Protective Association. You pay us so much a month, and we insure you against accidents."

GUY'S eyes opened wide. "Accidents? Insurance? What manner of madness is this?"

"Sure. Accidents happen all the time. This country is crawling with bandits. They make trouble for you solid citizens just for the hell of it. They're getting bolder every day. First thing you know, one of 'em will come along and heave a brick through your window, just for no reason at all. Like this."

Pete found a convenient stone and demonstrated. Glass flew, with a shattering crash. Guy's jaw dropped in horrified disbelief. If the castle itself had tumbled about his ears, he could have been no more surprised.

"See?" Pete prattled on. "Insure with us and your windows are safe."

Sir Guy shivered slightly. His fingers were twitching as he looked intently at Pete's throat.

"No outlaw dares do that to Guy of Gisbourne. Heads would fall hereabouts like the leaves of autumn."

"But you don't savvy how smart these hoodlums are getting. They ain't scared of you. They doped out a clever angle to make it tough for you. The SMIPA is the only company what can insure you against this new trick, because we know how to put a stop to it."

Guy was intrigued in spite of himself.

"And what might this device be? Though, mind you well, I fear no shabby outlaw trickery. Heads," he reiterated, "would fall—"

Pete wasn't listening. Instead, he was directing two of Robin Hood's men to roll a few of the rough-hewn casks, which they had painfully carried with them, to the brink of the moat. These they broached. Fish oil dripped slimily onto the green waters and spread rapidly. At a signal, a torch was flung in.

"This," Pete explained, "is what

you may have to contend with if you don't sign up with the SMIPA."

A sheet of flame belched up surrounding the castle. Black smoke rose in a greasy cloud.

"Phew!" gasped Pete, falling back. "That must be whale oil. This is sure going to smell up the place!"

"Worse than a lazar-house," Robin Hood agreed, holding his nose.

The castle wasn't air-conditioned. Since the moat completely surrounded it, it didn't matter which way the wind blew. Fish oil smoke blasted in through crevices, windows, and over the battlements. The aroma was enough to change history.

Furiously, bewilderedly, Guy thundered orders. His men streamed out of the castle and vainly sought to stem the blaze with dirt.

The outlaws fell back, scattered down the knoll to enjoy the spectacle. Only Pete and Robin Hood stuck it out on the drawbridge, presenting Sir Guy their cogent arguments. They maintained he really should sign up with SMIPA to prevent recurrence of such an atrocity. Sir Guy was wondering which head to lop off first when an interruption came.

A MAGNIFICENT coach came charging up the road leading to the castle. It was drawn by six white horses, and soldiery sprouted from every window. On the door was printed a sign in golden letters.

"Ye Sheryff of Nottinghamshire. And Hys Deputys."

Most of the outlaws retreated to a safe distance. But Robin Hood and Pete were trapped on the drawbridge as the carriage pulled up. An enormous personage descended grandly, a Falstaff, a veritable Tony Galento of a person. He bowed with incredible ponderousness to Sir Guy.

"The law is usually administered by ourselves, Sheriff," Guy growled irritably. "I was just going to—"

The sheriff took over with great efficiency, herding everyone available inside the castle walls and explaining in an undertone to Guy as he did so. Pete caught snatches of the conversation.

"Saw the smoke from yon village. . . I've been expecting some unusual phenomenon. . . There's an infamous wretch of an outlaw in these parts lately, a low fellow with some native shrewdness. But he is incapable of coping with the advanced scientific functions of law enforcement. Preparations have been made. . ."

The sheriff won a grudging assent from Guy. Quickly, the fat man unrolled a bundle he was carrying. It consisted of the air-tight bladder of some animal.

A hole at one end was fitted around an upright, hollow reed.

The sheriff's eyes glittered as he glanced from Pete to Robin Hood.

"Bare your right arms," he commanded.

A horrible suspicion seeped into Pete's brain. That bladder outfit looked very much like a blood-pressure tester. Wrap it around the arm, fill it with air, put liquid in the reed to rise and fall as the heart beat.

But no! It was worse than that!

"Wow!" cried Pete as understanding dawned. "That's a lie detector! And you ain't no sheriff. You're Professor Aker."

The sheriff chortled triumph, putting his apparatus away.

"It will be unnecessary to conduct my test. This oaf"—he indicated Pete—"is my man. Thief, murderer, politician, cheat, wanted by the Crown. I take him into custody."

Sweating, Pete clutched the sheriff by a fat arm and dragged the man aside.

"You can't do this to me," he whispered frantically. "It's a double-cross!"

Professor Aker looked mean. "I suppose you didn't plant that money in my pocket and get me almost killed by Moratti. When we went back to Rome, you were a politician and I was thrown to the lions. In Egypt, I was a felon and you made yourself a promoter. Bah! You're going to sit quietly in a cozy little cell now, till Mayhem brings us back to our own time sector. You won't be hurt. But you'll be where I can have my eye on you."

Sir Guy approached, smiling unpleasantly.

"You have my thanks, Sheriff. But I shall administer the law myself. I have a score to settle with both these men. Get you gone. I shall send you a bag of gold."

PROFESSOR Aker blinked. He had not bargained for this. Repenting too late, he endeavored to argue, but soon found that Sir Guy of Gisbourne was stronger than the law in Nottingham.

Still wildly protesting, the sheriff was ejected with all his men. Pete was too stunned even to protest. Fortune had kicked him, with great thoroughness and vigor, in the pants. And of course he had only himself to blame. If only he hadn't stashed that dough in Aker's pocket!

Rough hands seized Pete. "Take them away!" Sir Guy roared. "To the dungeons with the rest of the rats!"

* * *

Pete sat on the straw of his cell and scratched himself. The oil smoke hadn't killed the fleas, apparently. He rattled his chains, sighing sadly.

There were three possibilities. One, Dr. Mayhem might bring him back to 1940 before it was too late. Luckily for Pete's peace of mind, he did not know that Moratti's wild gunfire, just before the gangster had lost consciousness in the lab, had smashed two of Mayhem's ingenious tubes. The doctor was laboring day and night to replace them.

Two, the execution might go through as scheduled. Pete shuddered. Aker might be able to help, but he was seemingly helpless to untangle the knot he had created. Law officers were simply creatures of the feudal barons. Stooges, in fact. Yet Aker was a scientist, and he might be able to dope out something.

Three, a way of escape might be found. Yeah! Like escaping from Alcatraz!

Torchlight glimmered on the walls, and Pete peered through the barred door. A scrawny, middle-aged man in tattered garments was staggering dazedly along the corridor. He car-

ried a flambeau. Alternately he stared at the torch, at his surroundings, at his body and clothing. Then he wrapped his free hand around his head, monkey-fashion, and rocked from side to side. Now and then he cackled in mad laughter and muttered hysterically.

Pete's eyes grew round. He was listening to Italian oaths and prayers! Swift comprehension dawned on Peter Manx.

"Holy smoke," Pete gurgled. "It's Moratti."

THE skinny man looked up, saw Pete. He rushed toward him, clutching the bars in talonlike fingers.

"For Gawd's sake, brother, help me! I am Moratti, only I ain't. One minute I'm Moratti back home, then I'm somebody else. And I look like somebody that's been dead for hunnerts of years. What is this, anyhow? And who're you, brother? D'you savvy this business?"

Moratti seemed half crazy with fright. Pete grinned, enjoying his triumph. He reached out and seized Moratti's throat.

"Rat," he said, "I'm Manx. You was gonna plug me a few days ago. Well, now—"

His stubby fingers began to tighten, when a greater idea dawned. He released his fainting victim.

"Moratti," he said earnestly, "you want me to get you out of this mess?"

The gangster was utterly broken by his inexplicable transformation. He promised Manx great things if he would only fix up this mess. Pete was equally free with his promises.

"Well, don't try to understand it, punk, but them chairs in Doc Mayhem's lab sent us all back in time several hunnert years. See? And I'm the only guy what can get us back safe. Only I got to get out of this dump first. Now look. You can leave the castle any time, can't you?"

Moratti nodded vaguely. "I guess so. I'm a steward. They send me to the village once in a while for marketing."

"And how many marines they got in the castle, huh?"

"Maybe twenty. Most of 'em are

away somewhere fighting some other big shot."

Pete snapped his fingers, thinking quickly and effectively.

"Okay. Now look. You sneak outa here and go to Sherwood Forest and find Friar Tuck and—" His voice sank to a confidential murmur, droning on for several minutes. "Think you can do it? If you do, I'll get you back home again."

"I'll try, Manx," Moratti quavered. "So help me, I'll try."

He shuffled away. Pete chuckled triumphantly.

"Science!" he declared snugly. "That's the stuff. Just like somebody said once, science is golden. . . ."

Two days dragged past. On the afternoon of the second day, Pete was haled from his dungeon and dragged by the heels into the castle courtyard. There he saw (1) Sir Guy and a handful of other guys come to see the fun, (2) Robin Hood, and (3) a gibbet and a large cauldron boiling merrily over a crackling fire.

Robin was dirty but unafraid. He winked at Little Peter.

"Looks like you're getting a dirty deal, comrade. They intend to boil you. When they throw you into the pot, lean over the side and inhale the flames. It's quicker that way."

"Oh," Pete said faintly.

"I get hanged, then we both get drawn and quartered. But that won't hurt. We shall be dead, of course. Good joke on Sir Guy, eh?"

PETE decided that the British had a funny sense of humor. He glanced at Guy, who was laughing jovially enough. A faint aroma of decayed fish still exuded from Guy's rich trappings. Modern plumbing was not among the blessings of the fourteenth century, much too evidently.

Beyond the courtyard wall, not very far distant, he could just see the high hill where Sherwood Forest began. For a moment he thought he discerned figures moving there. But he could not be sure.

Would help arrive in time? Moratti should have put the plan into execution before this, unless something

had gone haywire. Soon it would be too late.

"We had best hurry," Sir Guy said. "I hear that traitor of a sheriff has gone to King John to win a reprieve for these dogs. But he won't be back for hours, I think. Are you ready?"

A black-masked figure nodded. "It is ready, my lord."

"Good. Wheel the derrick into place."

A scaffold contrivance was pushed toward the cauldron. Pete stared. Guy caught that horrified look.

"We lower you in gradually," the lord explained pleasantly. "First the feet, till the boiled flesh strips away from the bones. Then still more, inch by inch, still nothing is left. The resultant soup we feed to the hounds."

"A fine thing," Pete moaned. "Mrs. Manx' little boy ending up at Ken-L-Ration."

"Hoist him up!" Sir Guy commanded.

Pete was seized. Ropes were brought.

"Farewell, Little Peter," said Robin Hood. "You were a friend worth knowing."

"Same to you," Pete gulped.

A shadow fell on the courtyard. Before the startled soldiers could move, there was a *whir* and a *twang*. The executioner who held Pete sprang high, a feather shaft protruding from his throat.

From above came a great cry.

"Hola, Robin! Hola, Sherwood!"

"*Sathanas!*" someone screeched. "Aroint thee, demon!"

"Friar Tuck!" Pete yelled. "Three cheers and a tiger!"

Floating down the winds came an extraordinary contraption. It looked like a bird with rigid wings. Fresh cut, slender wood was its framework. The wings were covered with a conglomeration of vari-colored silks, stolen doubtless from a conglomeration of travelers in Sherwood. From somewhere in the midst of the fantastic construction came the raucous voice of Friar Tuck.

The glider dipped for a landing in the wide courtyard and tilted tipsily. Abruptly, it spilled its pilot onto Sir

Guy of Gisbourne, who went down for the count. Soldiers rushed forward with bared blades, only to halt in fright.

"More of them! More of the demons!" they cried.

OVER the battlements they sailed, a dozen or more of crazily constructed but airworthy gliders, raining down murderous arrows from above. One or two inexperienced pilots cracked up against the walls. But the men in Lincoln green continued to catapult bravely from the air, steel swords flashing, yelling their war cry.

"Hola, Sherwood! Hola, Robin!"

Guy's soldiers fought, but a quick sortie opened the drawbridge. The rest of the merry men poured in. Ten minutes saw the end of the battle. The outnumbered defenders were dead or captured. Pete and Robin were free. Sir Guy was in the dungeon with ravenous fleas for bedfellows.

Robin Hood, Friar Tuck, Pete, and the miserable Moratti retired to the great hall to toast one another in hearty ale.

"Great magic indeed," said Robin, gulping mightily. "Men are enabled to fly like birds."

Moratti's thin chest swelled. "Shucks. Anybody who's made model airplanes can make a regular sized glider. Easy to teach outlaws to fly. Used to glide a lot myself over in Joisey. Anyway, the hard-packed road road from Sherwood to the castle made something they call a—uh—thermal. It makes the hot air and the boys just rode the thermal . . . But I'll kill the guy who says model planes are pantywaist stuff. So help me, I'll mow 'im down!"

Pete grinned and gently-cuffed Moratti halfway across the hall.

"Nuts. Remember, you ain't back home yet—"

He stopped, feeling a bizarre sense of disorientation, a hollowness in his stomach, a weird shock.

Woosh!

* * *

Pete Manx opened his eyes. He was back in Dr. Mayhem's laboratory. Guy's cattle had vanished, along with

Robin Hood's brave band.

He stared around vaguely. Mayhem was pottering about on some apparatus near by. Slung awkwardly over the second electric chair was Moratti, just reviving. Mayhem turned.

"Oh, hello, Pete. I brought Professor Aker back first. He told me all about your adventures. He seemed slightly ashamed of how he'd acted. Begged me to apologize for him."

"Aw, that's okay," Pete chuckled. "We came out all right. Moratti really done it. Hey, pal?"

The gangster managed to stand up, passing a dazed hand over his brow.

"Yeah," he said incredulously. "I guess so. We sure showed them monkeys."

"And I brung you back like I promised, hey pal?" Butter dripped from Pete's tones.

Memory came back to Moratti.

"Yeah, you did. But I seem to remember you slugging me just before we left the castle, knocking me clear across the room. How about that, mug?"

Pete laughed falsely. "Just a little fun, pal. No offense. Now wait, Moratti! No sense getting sore. Stay away from me! Ain't you got no gratitude?"

Pete retreated from his ertswile pal's twitching, murderous fingers.

Mayhem had apparently removed the gangster's gun, but Moratti seemed not to need any weapon.

"This," he said hoarsely, "will be fun."

Pete brought up with a jolt, his back against the wall. Suddenly his fumbling hand touched a long pole, used for opening transoms. The touch of the wood struck a familiar chord in Pete's brain. It was the exact length and weight of a quarterstaff. He whipped it into position as Moratti lunged.

The unfortunate racketeer was stabbed in the middle with the metal-tipped end of the pole.

"Whoosh!" said Moratti. He doubled up, making horrid noises, striv-

ing to get enough air to tell Pete what he intended to do. But Mr. Manx, remembering his successful strategy with Robin Hood, jammed the pole down viciously on Moratti's corns.

The gangster screamed shrilly. He hopped about, flailing the air.

Pete proceeded to drive his victim out the door. Loud and anguished cries diminished rapidly down the hall.

Pete returned, looking pleased.

"That," he said, wiping his hands, "is that."

Mayhem blinked absent-mindedly.

"Eh? Oh, Moratti. Congratulations, Pete. But what's going to happen to you when Moratti gets a gun and some of his thugs together?"

"Nothing. I won't be here," Pete said firmly. "I am taking it on the lam right now. If you can slip me that dough I loaned Aker a few days ago— You still got it, huh?" he asked hopefully.

MAYHEM withdrew a roll of bills from his smock, divided it into two portions, one of which he gave to Pete.

"I took the precaution of rescuing your money from the professor's coat."

"Hey!" Pete objected, counting his ill-gotten gains. "One grand? I had three! You're holding out on me."

"Two thousand dollars is my fee for sending you back in time," Mayhem said blandly, patting his pocket. "I need new equipment, and this donation will come in handy. After all, your life is worth at least two thousand dollars, isn't it?"

Pete's face fell.

"Yeah," he said glumly. "I guess so. Well—"

He fumbled in his pocket and brought out two ivory cubes. These he let drop on the lab bench.

"Seven! Okay, Doc, keep the two grand. I still got the bones. And believe you me, I'm a scientist with these babies. Nothing like science, hey, Doc?"



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CHAPTER I

Special Assignment

WHEN Colonel Ormsley, head of the new branch of U. S. Espionage, cocked his bushy gray eyebrows and stared at me, I knew I was in for a tough job. "Come on in, Armitage," he said. "Sit down."

"Yes, sir," I said, giving him a naval salute and then drawing a chair up to his desk.

"Never mind the salute," he said sourly. "From now on you are no longer Lieutenant Jack Armitage of the U. S. Naval Intelligence. You are E-Twenty-nine of the F.B.I."

"Yes, sir," I answered dutifully.

The colonel leafed through the file of papers before him in silence. It wasn't like Ormsley to be gruff and ugly. Something was troubling him.

"Armitage," he said, "after we went to the trouble of transferring you from Naval Intelligence, you may have wondered why we sent you down to investigate the mystery submarine *Squid* before the salvage crews brought her to the surface."

"Not exactly, sir," I answered. "Having been in the navy, and being an expert in deep-sea diving, I took it as a matter of course."

"Humph!" he said. "I have here your report. All in all, you made three descents. You found evidences that two bombs were exploded *within* the ship, causing her to sink to the bottom with a loss of the entire crew. Have you any idea what caused this sabotage of America's new type undersea boat?"

"No, sir," I answered truthfully.

"Well, we have," he assured me grimly. "The Heidendorf Ring!"

I just stared at him.

"Listen, Armitage," he went on earnestly. "Do you remember the Osborne-Malvern expedition to the Sahara Desert? They intended to experiment with that new type of Osborne sun engine to tap solar power."

"Who doesn't?" I replied, nodding. "The entire party was wiped out—massacred by the Arabs."

"That was the account given to the public," said Ormsley in a grave voice. "In reality, the expedition was wiped out by the Heidendorf Ring—and the plans of that solar engine were lost. Do you remember the Gernshaw expedition to the North Pole? They hoped to establish an electrical station to generate power by tapping the flow of magnetism from the field of the magnetic pole."

"Yes, sir," I said, and stopped.

"The next spring, the relief ship found the entire party frozen to death. This was attributed to the breakdown of their heating equipment. But the plans of Dr. Gernshaw and certain parts of his delicate equipment were missing. The answer? The Heidendorf Ring! And now this submarine disaster—with its loss to our government of William Fitzmorrow's new radio torpedo!"

Colonel Ormsley consulted a card on his desk, then went on.

"How many bodies did you find down in the *Squid*, Armitage?" he asked.

"Thirty-three, sir, counting that of Mr. Fitzmorrow."

"ARMITAGE," said the colonel impressively, "there were thirty-four men aboard the *Squid*. One of them escaped before the explosion, stealing Fitzmorrow's secret invention, which had not yet been turned over to the War Department. The Gernshaw expedition was short one body—a mechanic by the name of Merle. One body was shy in the tally of the Osborne-Malvern party—a mechanic by the name of Chatterton. Isn't this beginning to look fishy?"

"It certainly is, sir," I agreed.

"We have plenty of reason to suspect the Heidendorf Ring, the greatest and most deadly spy ring in modern history, to be responsible for these disasters," Ormsley told me gravely. "It specializes in military activities, armaments, and scientific inventions. Headed by a diabolical genius, the Heidendorf Ring is working for the ultimate success of a certain European dictator who hopes to control the entire world. Ruthless, merciless, smashing, the Heidendorf Ring is

composed of men, of undeniable brilliance and ability.

"Dr. Heidendorf is just a name to us. About him personally we know absolutely nothing, save that he must be as cunning and ruthless as his master. But we do know this—he has a positive genius for planting his men on the inside of big things. And the other day we had a lucky break. A man working in the Bascom Steel Mill was suspected of being one of Dr. Heidendorf's spies. We intercepted an innocent looking message to him. It was in code. It was broken down for me this morning. Here's a copy of it. Read it."

I accepted the sheet of paper and read:

Z-213:

Am making progress on Dorrance case. Drop your present work and report to Dorrance as skilled mechanic. A-111.

I looked up. Colonel Ormsley made a grimace.

"We didn't even get to arrest this Z fellow," he said. "He faded like a wraith. But we have this meager evidence. And I think we'll take a leaf from Dr. Heidendorf's notebook and try his own tactics. Have you ever heard of Dr. Alfred Dorrance, Armitage?"

"Dorrance . . . Dorrance," I reflected. "Is he the man who is working on some sort of hydrogen rocket?"

"Exactly," nodded Ormsley. "Only he is doing more than that. Our information indicates that he is building a rocket ship for stratosphere flight. If that is successful, it will mean the biggest step in science since the invention of the airplane. And already Dr. Heidendorf is sending his wolves in for the kill. And that's where you come in."

"I see. You want me to apply for this job as one of the Heidendorf spies?"

"I do not!" snorted Ormsley. "You wouldn't last as long as the proverbial snowball in Hades. I want you to get on the inside as a bona fide mechanic and then put your finger on the Heidendorf agent that we are certain is already on the ground. We must close down on the Heidendorf Ring and crush it!"

"Yes, sir," I answered earnestly.

"I'll arrange to get you a job with Dorrance," went on the colonel. "It will be up to you to stay there. You're to protect Dorrance's life, prevent another disaster, and get the Heidendorf agent that we are positive is there. You will be in constant danger. No one must know you are a secret agent—not even Dorrance. He might accidentally give you away. Remember, his closest intimate may turn out to be his deadliest enemy. I have chosen you because you are really a good mechanic, and you'll be able to play such a role. Do you accept?"

I thought of those thirty-three still forms I had seen in the holds of the *Squid*, and I nodded firmly.

"Yes, sir. I'd like to have a hand in bringing the Heidendorf Ring to book," I said earnestly.

"You've got it," Ormsley said. "A successful stratosphere ship will revolutionize industry and warfare. It would be a terrible weapon in the hands of a ruthless nation. And, like other inventions I have named,



Dorrance has kept his plans and specifications to himself. If the Dorrance ship works, and the Heidendorf Ring steals it and kills its inventor, the whole world will be at the mercy of Heidendorf's country.

"You will be strictly on your own. When you need us, we'll supply you all the help you want. Until then it's up to you."

"Yes, sir," I said. "I will do my best, Colonel Ormsley."

CHAPTER II

Stratosphere Ship

THAT espionage and sabotage must have been the furthest things from the mind of Dr. Dorrance was obvious in that no guards seemed to be posted about the great hangar in the rear of his stately home. The whole place was cradled in quiet as I got out of my car, picked up my heavy kit of tools and walked boldly to the side door of the mansion.

Because Dr. Alfred Dorrance had not been under direct surveillance until now, the information furnished me by Colonel Ormsley was meager. I had nothing to go on but a list of the scientist's closest associates.

I ran over this list mentally now. First, there was Martin Powell. Powell, a man of fifty, short of stature and powerful of frame, was an eminent geologist and engineer. He had a couple of university degrees and was outstanding in his field.

Second came Tom Joyce. He was a blond young chap about my own age and size. A pupil and disciple of Dorrance, he was the scientist's laboratory assistant and a superb draftsman. He was able to put on paper the dreams of his mentor so that other men could understand them and create them in concrete form.

Third, there was Diana, Tom Joyce's sister. She was Dorrance's secretary. Also his fiancée, although fully twenty years his junior. Both Tom and Diana had been put

through university by Dorrance and seemed to be under some sort of obligation to him.

Fourth was Professor Etienne Parneau, the renowned Alsatian astronomer, author of a couple of excellent books on the stars, and discoverer of Parneau's Comet. Parneau traveled all over the world, photographing eclipses and gathering astronomical data of every possible kind.

And fifth, there was George Adams Quincy. Of them all, Quincy seemed the most out of place in this group. He was a millionaire sportsman and big-game hunter, about thirty years of age, reckless and adventurous, and a firearm expert.

That was the crop out of which I was to select a deadly agent of the mysterious Dr. Heidendorf—unless there were others, such as servants and minor technicians of staff, whose existence was yet unknown to the F. B. I. Not a very promising group to work with, all of them established and above reproach. But Ormsley had cautioned me that the agents of the Heidendorf Ring were well concealed and might be found in the most unexpected places. Any one of these five might be my man!

EITHER the doorbell was out of order, or nobody heard my ring. At least, it wasn't answered, and I knocked briskly. Still no result. All about me was silence.

In exasperation I tried the door. To my astonishment it opened under my touch. I hesitated, and then walked in. Not counting what was contained in my tool bag, I was unarmed—as befitted the role I was playing—and I wasn't sure that I wanted to prowl this particular house.

Then I heard a man's voice coming from the direction of the library, and I walked along the carpeted hall in that direction. On the threshold of the room in question I paused. Standing before a long table was a slender man in a white laboratory smock. His back was toward me and he was speaking to a young woman, who was seated at the table.

"Checked my figures last night, and he agreed with me. Together we will use the electroscope to make sure. But, Diana, beneath Tycho there is wealth and power untold for the use of mankind."

"I knew it, because you have already told me so, Alfred," said the girl in a soft voice which set silvery bells to chiming for me. "Now that the professor has corroborated your figures, why delay any longer? As soon as the *Icarus* is stocked and provisioned, why not leave?"

"You forget the radium," reminded the man sadly.

The girl bit her lip quickly. I could see her in profile.

"What a shame!" she said quickly. "Pounds of radium for the taking, and we are baffled over the attainment of four little grams of the stuff. But surely George Quincy will be able to—"

THE unmistakable feel of a small, round, metal circle suddenly manifested itself at the nape of my neck.

"All right, mister!" said a hard voice. "Start walking on into the room, and no

tricks!"

The girl started sharply and looked toward the door with widening eyes. The man in the white coat turned his head in mild annoyance at the interruption. Then he saw me and the man I couldn't see, and his annoyance was replaced by consternation.

"Good morning," I said brightly as I obeyed my unseen captor and marched carefully forward: "This is the home of Dr. Alfred Dorrance?"

"It is," the man before me answered. "I am Dr. Dorrance."

"I'm the man from the National Oxygen Company," I stated in an even voice. "If the gent behind me isn't nervous with his trigger finger, I've a work order in my pocket which I'll get out."

"I came along the hall to find this man eavesdropping at the door," said the man behind me. "So I collared him."

"The National Oxygen Company?" Dorrance caught at that. "This is the man we are expecting, Tom. You can put away your gun."

"Not until he explains what he was doing inside the house," said Tom, but he drew back a step and removed his weapon from my neck.

"I rang the bell," I obliged immediately. "Nobody answered, so I started to shake the door. It opened under my touch, and I just walked in. I came straight to the sound of voices here. I'm no housebreaker. Here's the work order."

Dr. Dorrance extended his hand for the sheet, and I gave it to him. I knew there'd be no trouble about that. It was bona fide. And the coupé outside belonged to the National. I even had a union card and a social security number. The department is very thorough about such things.

I SIZED up the scientist as he looked over the work order and then passed it to the girl. He was in his early forties, with graying hair and fine, large, speculative brown eyes. Clean-shaven and faintly lined, his was essentially the face of a thinker.

Now he smiled in friendly fashion at me, taking in my strapping six feet and broad shoulders, black hair and blue eyes, and general husky appearance approvingly.

"Ah, yes, of course," he said. "That bell. I intended having it fixed, but I forgot about it. I've been expecting you, Mr.—"

"Armitage," I supplied. "John Armitage."

"Mr. Armitage," he finished. "My associates and I are conducting an experiment which requires—"

"Just a minute, Dr. Dorrance," interposed the girl coolly, her violet eyes searching me up and down. "May we see your identification papers, Mr. Armitage? Just a matter of form, but necessary."

Silently I passed my wallet over to Dorrance. He handed it to the girl. She proceeded to examine its contents in a brisk, businesslike way. I set down my bag and waited. There was a moment of silence. Then the girl took up the telephone on the table and dialed the National Oxygen Company. She established the identity of one John Armitage. Satisfied, the girl replaced the transceiver.

"One last formality, Mr. Armitage," she said. "Kindly write your name and address on this sheet so I may compare with your signature on your driver's license."

Wordlessly I complied, and all the time I was wondering if she and her brother were mixed up in the Heidendorf Ring. If not, their present actions were a bit queer, to say the least.

"Everything is in order, Dr. Dorrance," said the girl finally, relaxing.

I transferred my attention to the girl. Diana Joyce was just—well, exquisite. She looked up to catch my admiring eye, and she colored faintly. Dr. Dorrance began

Tom, here—by the way, this is Tom Joyce, my invaluable assistant. And his sister, Miss Diana Joyce, my secretary."

"Jack Armitage, mechanic, at your service," I said, responding.

"Powell and Tom have already installed the apparatus in question," resumed Dorrance. "It simply requires a check-up by an experienced man. You see, our experiment deals with a sealed chamber which must have its own oxygen unit to remove carbon dioxide from the air. If you won't object to being blindfolded now, we will conduct you to the unit you are to inspect."

"What is all this?" I demanded, in charac-

Meet the Author of this Novel

BORN near the close of the last century—1897, in St. Louis, Mo., Oscar J. Friend is a pharmacist, a writer, and an editor. Educated in the mid-West, he has been writing for about twenty years, having some twenty-odd Western and detective novels to his credit and numerous short stories, poems and articles. He has read science fiction, he tells us, ever since he was old enough to read, and has been doing some scientific writing the past two years exclusively for THRILLING WONDER STORIES, STARTLING STORIES, and STRANGE STORIES.

He is married, has two grown daughters, lives in a Long Island suburb—commuting to the United States five days a week, as he puts it—is inclined to stoutness, has no outstanding vices or virtues, enjoys the same things that most all normal Americans like from hot dogs to grand opera, and his present hobby is ping-pong.

From "Who's Who in America" we learn that Oscar J. Friend is a Methodist, a Mason, and writes his mystery stories under the pseudonym of Owen Fox Jerome. From personal contact we can assure you that Friend is a regular fellow with a sly touch of humor, plenty broad-minded, and withal, a swell gentleman from the Southwest.



OSCAR J. FRIEND

Author of "Roar of the Rocket"
and many other stories

speaking again as calmly as though nothing out of the way had happened.

"Mr. Armitage," he said, "I could not explain in detail over the phone to your company just what I required. Before we go further, let me ask—are you familiar with air-purifying units of all kinds?"

"Most of them," I answered. "Such as what?"

The three of them glanced at each other. Then Dorrance plunged.

"Such as oxygenators used in modern—submarines?"

"Yes," I replied without batting an eye, but I was secretly astounded.

DORRANCE appeared vastly relieved.

"This is a matter of life and death," he went on gravely. "Mr. Martin Powell and

ter as a puzzled and honest workman. "Where is the plant?"

"You will be at work in less than five minutes," promised Dorrance.

"Okay," I agreed curtly. "It's all in the day's job, I guess."

"Diana, the blindfold," said Dorrance.

THE girl picked up some bandaging from the table and came forward. I stood docile while her nimble fingers deftly hood-winked me.

"Tom will carry your tool kit for you," Dorrance then said, taking my hand. "Come this way."

The four of us moved out of the library, down a flight of steps to the basement, and through a tunnel that was dank and musty. After proceeding about the right number of

steps to put us under the huge hangar I had already noted, we ascended to ground level. The doctor still guiding me, we approached the ship he had been building and I was led inside through a low ground port.

Finally I was halted and my blindfold removed. I stood in the windowless interior of what Dorrance expected me to believe was an experimental chamber of some sort.

"Here you are," said Dorrance, indicating a compact mass of familiar machinery—pumps, compressors, chemical tanks and filters. "For your information, this unit must keep the air breathable in a chamber of approximately twenty thousand cubic feet."

I could have laughed aloud at his naiveté. To expect me to swallow that! For I knew that I stood within the hull of the Dorrance stratosphere rocket ship—the *Icarus*.

CHAPTER III

Four Grams of Radium

BY the appearance of the wide, flat ceiling overhead I knew Dorrance's ship was double-decked. While I could only see a limited portion of this lower level, I estimated the ship to be about seventy feet long. It seemed to be built in the conventional torpedo shape. I wondered how heavily it was motored and what the wing spread would have to be.

Now, however, wasn't the time to get inquisitive. I opened my bag, laid out some tools, and set to work checking the oxygenator. Dorrance had certainly spared no expense in his equipment. An hour's work proved to me that this outfit would have handled the air for a hundred-foot submarine without the least bit of trouble.

"Where are the batteries?" I asked.

"There are no batteries," was Joyce's surprising answer as he watched my face. "The electric power supplying the motors and pumps will be constant."

No batteries! That seemed phony. Suppose the electric power supply failed? I shrugged my shoulders.

"Well, come on," I said. "Let's check the air ducts. This unit will do twice the work required as long as it gets the juice. Where's the control room?"

"Hold on!" said Joyce sharply, halting me. "This is all you need do."

"But I can't okay the job unless I know the ventilating system is—" I began.

The return of Dr. Dorrance and Diana prevented further argument. With them came an amazing looking man. He was short and wide, with great muscular arms. Lacking a good six inches of my height, he must have been fully that much wider than I. He had to move along the narrow corridor on the bias. But he was not simian in any respect. He had a long and highly intelligent, if sad, face and piercing gray eyes. I placed him instantly—Martin Powell, mechanical genius and geologist of note.

"Armitage is through," announced Joyce. "He okays the job."

"I said the oxygenator itself is all right," I corrected drily. "I can't okay the entire system unless I'm permitted to go over it carefully."

DORRANCE looked hesitant. "That is a vital point. What do you think, Powell? He doesn't necessarily have to enter the control room."

The geologist looked at me shrewdly, and I experienced a vague thrill as I wondered if he could possibly be the agent of the Heidendorff Ring, and if he knew who and what I really was. Then he shrugged.

"No harm, I suppose," he said in a deep, sad voice. "He won't make head nor tail of the rest of the machinery on this level."

"I vote against it," put in Tom Joyce positively. "This man's convinced me he's highly intelligent."

"Tom's right," said Diana Joyce quickly. "You can't afford to take any chances with strange—"

"That's all, Armitage," said her brother crisply. "You needn't okay anything but the oxygenator. Put on your blindfold and I'll take you back to the library."

Seeing that they were about agreed to dispense with my services, I threw caution aside. Ormsley had told me that it was up to me to stick on the job once I had got in.

"What's the idea of all the secrecy?" I asked boldly. "Are you people trying to conceal from me that this 'experimental chamber' is really a hydrogen rocket stratosphere ship?"

All three men looked startled. Diana Joyce gasped faintly, her eyes going wide in that lovely manner of hers. There was a painful silence.

"I knew it!" finally exclaimed Tom Joyce in a bleak voice. "He is a spy!"

I was treading on thin ice now, but I had to win the confidence of these people.

"What do you mean, Armitage?" asked Dorrance, perplexed. "What is a hydrogen rocket ship?"

"You ought to know, sir," I answered promptly. "You've built the first one."

"See?" said Joyce bitterly. "We don't dare let him go now."

"Who sent you here, fellow?" demanded Powell in a curt tone. "Are you a spy?"

"No," I said gravely, "I'm not a spy. I'm a mechanic, and I use my eyes. Who hasn't read about Dr. Dorrance and his gravity nullifier? And at National we've heard the rumors of his water electrolysis machine which reduces water to its two component gases—hydrogen and oxygen—and his rocket-tubes which use the oxygen to fire the hydrogen. Any fool can see this is a craft of some sort. So, putting two and two together, I guessed that it must be a stratosphere ship."

"Just who are you, mister?" demanded Powell, his gray eyes cold and piercing.

"An oxygen expert for the National Oxygen Company," I replied steadily. "By profession I'm a deep-sea diver."

"Deep-sea diver?" exclaimed Dorrance, his eyes lighting. "Tom! Martin! This is a godsend. He's just exactly the man we need. Deep-sea armor is astonishingly similar to—"

"Wait!" cut in Tom Joyce sharply. "I want to know more about this man."

"Well, the cat's out of the bag," said Powell sadly. "Let's go back to the house and cross-examine Mr. Armitage."

TOM JOYCE drew his automatic. He menaced me with it. Powell scooped up one of my wrenches.

"I don't know what your game is, fellow," he said, "but you won't live to make any funny moves. Head back along the corridor behind Martin Powell. You can leave your tools here. You won't be needing them for some time."

With Dorrance and Diana leading the way, sandwiched in between the mighty Powell and the armed Joyce, I followed out of the ship and down through the tunnel to the house. I didn't even get a chance to examine the craft from the outside.

As we ascended to the hall of the house, we heard the squealing of brakes and the skidding of tires on the gravel of the driveway. A car door slammed, and footsteps came running toward the side entrance.

Two men dashed into the house.

The first was a small and slender man who seemed to be a bundle of nervous energy. He was dark and bright-eyed as a fox, his trim little beard giving his features an alert and pointed look. I recognized him from newsreel pictures. He was Professor Etienne Parneau.

Behind him came a man who was even larger than I. He was almost staggering under the weight of a handbag he carried. There was a smile about his handsome lips and a reckless, daredevil expression on his handsome features. George Quincy, the millionaire sportsman.

"Dr. Dorrance!" cried Etienne Parneau in high excitement. "The deal fell through. They wouldn't let us have the radium at any price. We were desperate!"

"Parneau!" exclaimed Dorrance, paling. "What do you mean? We had arranged for it."

"I know, I know," babbled the little astronomer, almost wringing his hands. "And Mr. Quincy had a certified check made out for the entire four grams—two-hundred-fifty thousand dollars—but, at the last minute—"

"The Federal Government blocked the deal," Quincy finished in a booming, jovial voice. "They wouldn't permit the private purchase of that much radium—on top of the single gram we had already bought—on the wild promise of double the quantity in return. So we held them up at the Foundation and took it. I guess we're in for it now. The police—"

"Hush, hush, for heaven's sake, hush!" cried the girl, gesturing toward me.

BUT Dorrance was not to be sidetracked. "You—you stole a quarter of a million dollars' worth of radium?" he demanded, aghast.

"Sure," panted Quincy, laughing as carelessly as a college student who had just been guilty of a campus prank. "We had to have it, didn't we?"

"Alas!" chattered Parneau. "There can be no turning back now. The police will be here as soon as they pick up our trail. I—*sacré bleu!* Who is this man?"

"A prisoner—oxygenator man," explained Joyce harshly. "What difference does it make—now? Quick! Go to the library where we can tie him up."

"Got to get rid of this radium," said Quincy. "I'll take it to the *Icarus*."

"But—but—" protested Dorrance weakly.

"The die is cast, *mon ami*," cried the voluble Alsatian. "This epochal flight is greater than mere governments and a paltry bit of radium. Your work must be crowned with success. Not a one of us but would sacrifice anything to insure your achievement. The *Icarus* is ready for her maiden voyage, *n'est-ce pas?* *Voilà!* All that remains is to take off."

On top of the Heidendorf Ring had come this criminal theft of a quarter of a million dollars' worth of radium. And now the entire group must be on the verge of fleeing to Europe in the Dorrance stratosphere ship. I knew that I had to prevent that—quickly.

Desperately I dived for Tom Joyce. I grappled with him and twisted his gun wrist to his side before he could recover. He was helpless as a baby in my powerful grasp. I was going to take that gun away from him and get out of here in time to prevent their escape.

The idea was good, but Martin Powell was equal to the emergency. He must have been quick as a cat on his feet. He leaped toward us and slammed me across the back of the head with the spanner he carried.

The world exploded silently, in a flare of orange-colored light that quickly blacked out into oblivion. My last conscious impression was a vision of Diana Joyce staring at me with wide and frightened eyes, her lovely lips parted in a scream I did not hear as I plunged senseless to the floor.

CHAPTER IV

Shanghaiad

I CAME to my senses to find myself on a comfortable bunk in a tiny cubicle of metal shaped something like a Pullman car section. A low, two-drawer chest bolted to the wall did duty as a sort of window seat and a cabinet for personal belongings. But there wasn't any window. And there was no other furniture in the room.

Spartan as this cell was, there was an electric light in the curving ceiling and a small electric heating unit in one wall, and an unmistakable little loud-speaker in the opposite bulkhead. Inside the wall was a shallow recess containing a water faucet, soap, toothpaste, and so forth. The only real openings in my tiny world of metal were the metal door in the one straight wall and a foot-square aperture covered with a grill high up in each bulkhead. This was the ventilating system.

But I discovered all this later. My first conscious thought was about my splitting headache. Then I found that my noggin had been neatly bandaged and that I was neither bound nor gagged. Next, I learned that my watch had stopped. It had run down. This indicated that I had been out more than twenty-four hours, for I had wound the watch before setting out that morning for Dorrance's place.

While I wrestled with the time element and the headache, I became aware that the roaring in my ears was not the blood rush-

ing through my head, at least, not altogether, but was the muted roar of something like a combustion engine without a muffler. With a thrill of alarm I knew what it was—hydrogen rockets! We were in flight. I listened in vain for the faint thunder of radial motors with props clawing at thin air. There was no such sound, or else it was swallowed in the roar of the rockets.

I guess I must have made some noise coming out of my coma that was picked up by the two-way speaker in the wall. For abruptly the door slid open, and two men crowded into the cell. They were Dr. Dorrance and Martin Powell.

"Ah!" said Dorrance gently. "So you are awake at last."

"Yeah," I said thickly, sitting up and gripping my head. "What time is it, and where am I?"

"You are aboard the *Icarus*, and it is nearly twelve o'clock, noon, Eastern Standard Earth Time."

"Earth time?" I was faintly puzzled. "I've been out only two hours?"

"You've been out twenty-six hours," said Powell ruefully. "I fetched you a harder crack than I meant to. I'm sorry."

I was plenty sore, but this was no time for me to start anything.

"Skip it," I said. "I'll even things up some other time."

"You are entitled to plenty of explanation, Armitage," said Dr. Dorrance apologetically. "And you shall have it—now."

"All right," I said sourly. "Start talking."

"In the first place, this is Professor Martin Powell, an eminent geologist. I don't think I introduced you before."

"We've met," I conceded. "He borrowed one of my wrenches."

POWELL nodded at me sadly and rubbed his long chin. Dorrance went on gently.

"You see, it was not what you overheard in the house that brought you here. It's what you said in the oxygenator room. You had just proved you knew machinery, and you said you were a deep-sea diver. Well, Mr. Powell needs a relief man, and we all need an armored suit expert, so you just naturally fitted into our plans. Working in armor under water pressure is much like working in a space suit under air pressure in a vacuum. We didn't have time to consult you, so we—ah—"

"Shanghaied me," I finished for him. "I guess that's luckier than getting my throat cut over four grams of rad—what? Space suits? What kind of talk is this?"

Dorrance and Powell glanced significantly at each other. Then the scientist fixed his soft gaze on me.

"Prepare yourself for a slight shock, Armitage," he said. "The *Icarus* is not a stratosphere ship. It is really a seventy-foot projectile with a rubber-insulated triple shell. On the lower level is all of the machinery, the space suits, and the air-lock. On this level are the living quarters, supplies, and control room. Including yourself, there are seven of us. But we are not making a stratosphere flight. We are headed for—the Moon."

Slight shock, he said.

"What?" I ejaculated. "Are you crazy, or am I?"

"Show him," Powell suggested lugubriously. "He can stand it."

"Come," said Dorrance. "The artificial gravity in the keel is set at Earth constant. Feel up to walking a few steps?"

"Lead the way," I answered, getting to my feet.

In a daze I followed the two men out and along a narrow corridor which had rubber matting cemented to the floor. There were doors like mine, four on each side, breaking the severity of the corridor. Each door was a sliding affair. We walked toward the nearer end of the electrically lighted passageway.

"The sleeping quarters," explained Dorrance, gesturing. "At the rear of the ship—accommodations for eight people."

The corridor terminated in an oval-shaped room like the small end of an egg. It was equipped with several chairs, a table, and a couple of bookcases. But none of this caught my eye for the time being. Near the end of the room was nothing more or less than a glassed-in observatory. The curved, thick, but transparent glass was in sections—panes in metal casements. The breast-high central section was of metal. Mounted on a ball-bearing universal joint was a Milligan electro-telescope, its large end sticking out into space two or three feet.

Space was right! My eyes bulged as I stared through those curved glass panes. I am at a loss to describe what I saw first and just how it affected me.

I guess it was the Sun. That was the most normal thing I saw. Sunlight streamed in and brightened the observatory. But the space outside the windows was not the blue I was familiar with. It was like translucent black—nothing to impede or reflect the rays of the Sun. It was sickly, ghastly. And scattered around the visible sky were the twinkling points of myriad stars.

The Sun was shining through a nightmare night!

BUT that wasn't the worst. Hanging there in space between us and the Sun, a bit to one side, was a huge greenish-gray globe that swam in a hazy mist and revolved lazily on its axis like a great ball. I felt like the first time I had visited a planetarium, like the first time I made a descent to the bottom of the sea—only worse.

"What—what—" I articulated helplessly.

"Take a look through the telescope," said Dorrance, indicating the stool before the eyepieces.

I sat down weakly and looked. Instantly the great ball leaped so near that I could see only about half of it. And the half I saw distinctly had the familiar outlines of the Western Hemisphere upon it—America—floating in a sea of gray. As I stared it was slowly but visibly shrinking.

"Earth," murmured Dorrance at my ear. "At a distance of about twenty-five thousand miles. With the naked eye we are viewing it about as a microbe would view a basketball three basketball diameters away. We are traveling away from Earth at the rate of one thousand miles per hour."



The blue fire played upon the figure of Tom Joyce, outlining him in an aura of ghostly splendor

I DIDN'T faint, but I felt terribly sick. I removed my eyes from the eyepieces of the telescope and stared through one of the curved windows. Among the thousand conflicting thoughts and emotions which raged in my brain, the first impression that became clear was the sense of orientation. In spite of its proximity, the Earth did not seem to be beneath us, but to one side.

That sensation, when finally accepted, never left me. Due to the artificial gravity in the keel of the *Icarus*, down was always the keel of the ship. It made no difference how we traveled through space in relation to other objects, unless we were landing on a planet, down was ever the floor of the ship.

Then the irony of something struck me. I began to laugh a bit hysterically. I was thinking of what Colonel Ormsley had promised me. "When you need us, we'll supply you all the help you want," he had said.

Twenty-five thousand miles out in space and traveling onward at a thousand miles per hour. The entire world couldn't help me now. But with this came a sobering thought. Could I help the world? Dr. Dorrance's mystery ship was a weapon for good or evil far beyond the wildest dream of the U. S. Secret Service. To what lengths would the Heidendorf Ring go to possess such an in-

strument?

The next thing I became aware of was the utter absence of the sense of motion. Save for the steady firing of the rockets, whose yellowish-red glare I could see when I glued my forehead to the most convex pane, there wasn't the slightest sensation of movement. We seemed to be fixed in space, with the Earth shrinking smoothly away from us.

Dorrance and Powell waited. They didn't bother me with a lot of talk, simply allowing me to make my own readjustments. At last I turned away from that appalling vista and grappled with the solid reality of the observation chamber of the *Icarus*. Mathematics helped me.

"Is a thousand miles per hour our maximum speed?" I asked.

"Just about," Powell answered me.

"Then how did you take this ship off? To escape gravitation, a projectile's minimum speed must be about seven miles per second. That would be at least twenty-five thousand miles per hour."

"That's right," said Powell with greater animation than I had yet seen him show. "You have a head for figures, Armitage, but in this case you don't have all the facts. You don't require that speed if you can neutralize the force of gravity."

"But who can do that—altogether?"

"Dr. Dorrance," said the geologist simply. I turned toward the scientist, mentally groping for comprehension.

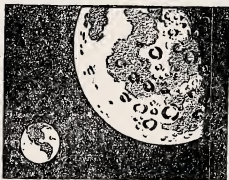
"The actual principles behind the gravity nullifying process are too complicated to explain briefly," Dorrance explained. "But I can tell you about the kind of fuel I used. Nature has already stored tremendous energy in a substance which far transcends the weight and volume of the substance itself."

"You—you don't mean atomic power?"

The scientist smiled and shook his head. "Alas, no. I mean radium. The slow decomposition of radium is speeded up immeasurably in the Dorrance Radium Engine. It furnishes enough power from three grams of radium to take a hundred-ton space ship to the Moon and back. That leave an ample margin for hydrogen rockets and a ballast tank of water for the same."

"Impossible!" I cried.

Martin Powell tapped me lightly on the shoulder and pointed out into the void at the weirdly terrifying spectacle of Earth adrift



in space. That argument was unanswerable.

"And it was Quincy who stole the necessary radium to power your engine," I said reflectively.

"Yes," Dorrance admitted simply. "The end sometimes justifies the means. And we need you. We've checked and rechecked and tried to anticipate every possibility, but there is so much to a pioneer voyage that we may yet find we have failed to take into account everything. Will you accept my deepest apologies for—kidnaping you, and take part willingly as a member of our expedition?"

The face I made must have been comical. What alternative had I? I couldn't jump ship out in the middle of space. Here I was, bottled up with Dorrance and five other people, one of whom was undoubtedly a ruthless agent of the deadly Heidendorf Ring. The slightest misstep on my part—and I could imagine the subsequent details.

"What else can I do?" I said aloud.

"Nothing," agreed Powell drily. "Sometimes a man talks himself into a situation by being too smart."

I heartily concurred with this, but I didn't like the way he said it.

66 "ALL right, I'll be good," I capitulated.

"What do you want me to do?"

"Take over control of all space-suit ex-

peditions, and relieve Martin Powell when necessary as engineer," answered Dr. Dorrance.

"And," I added to myself grimly, "protect your life and ferret out the Heidendorf agent—if any. A sweet job." But aloud I only said, "Okay. I'll play out the string under your leadership. But why in thunder are you going to the Moon?"

"That," promised Dorrance, "I will explain to you in good time. Come along now to the control room and meet our entire company as a bona fide member of our expedition."

CHAPTER V

Rendezvous in Space

IT was like a phantasmagoria, watching that huge silvery-gold disc rushing toward us out of the black depths of space. Sliding slowly across the forward observation port like a big, round cookie against a sequin-spangled drop of sable velvet, the Moon swept majestically onward at her steady pace of 2100 miles per hour in her orbit around Earth.

Right now she appeared to be approaching us far more swiftly than she seemed to be making her transit across the face of our control room port. She was looming so rapidly that it seemed she must surely slide by to one side and fall behind, putting us in the position of a torpedo which has overshot its mark, and facing us with the unknown perils of outer space.

This was illusory, of course—or Parneau had made a bad mistake in his calculations. Spatial navigation was worse than in its infancy. It hadn't even been born. It seems so simple now, that pioneer voyage to the Moon, but at the time I could liken it only to the voyage of a submarine in the middle depths of a vast ocean—three-dimensional travel toward bases that were mobile and moved at a greater speed than the space mariner.

I could readily understand why Dorrance had included Etienne Parneau in his party. Parneau, world-acclaimed astronomer and physicist, was the navigator of the *Icarus*. Out here in space he appeared in an altogether new light—as did each of us—and he was a wizard at mathematical computation.

There was a carefully calculated reason for every member of our expedition. Martin Powell's mechanical genius had built the *Icarus* from the blueprints drawn by Tom Joyce. He was chief engineer and, being a geologist, he was going to be invaluable when we reached the Moon.

Tom Joyce, assistant to Dorrance, had the ability to follow his mentor's progress and transmit his ideas to paper so others could interpret them. He was a scientific draftsman.

George Quincy was more than a financial backer. Being a gun and ballistics expert, and having hunted practically every kind of game Earth offered, he was in charge of the arsenal.

Diana Joyce's position was a bit less important, but if Dorrance had not brought her

along, a man would have been needed to fill her place. She was by way of being the supercargo. She had checked all supplies and equipment, and it was her duty to record all data and notes for future study.

Dorrance himself, inventor and leader, was the figure about which everything revolved. He was the dreamer of dreams, and the rest only helped him make the dreams possible and practical.

If Outside of being relief man, I was the shanghaied sailor who was going to take the primary risks and do the dirty jobs, if any. But this was no new experience for me. I'd been cleaning up dirty jobs for a long time. This was just a different kind of one. Earth and the menace of the Heidendorf Ring faded into the background.

TEN long days had passed since I awoke aboard the space rocket, and I had been very busy trying to catch up with the many things I had to know. Under Powell's tutelage, I had mastered the operation, if not the principle, of the radium engines, hydrogen rockets and gravity nullifiers.

There was a distributor, not unlike that on a motor car, which automatically fired the rockets in proper sequence and order, although there was an emergency panel in the control room which would permit the navigator to take over a manual manipulation of rocket blasts should the need arise.

There were gauges all over the ship for every conceivable purpose, from temperature and air purity to gravity and rocket firing, and it was the duty of every man to read each one of them once every twenty-four hours and submit the collective readings to Dr. Dorrance for constant check-up.

Diana had charge of food and water, although we took turns at cooking on the hot plates. Nothing was wasted. There was plenty of water for drinking and washing purposes, and the used and dirty water was carefully drawn into the electrolysis tank for fuel. The only inconvenience we experienced was that there were no baths. We did not dare spare the water.

That was one of the first questions I pounded to Dorrance.

"I've always understood there is no water on the Moon," I said. "Suppose we run out? How will we get back to Earth?"

"A good question," he answered me. "We computed how much water is needed for the rocket-tubes at cruising speed all the way to the Moon and back, and doubled the quantity. By saving every drop, even after it is used, we will have plenty for the *Icarus* and enough for human needs for three months. In case we've misfigured or have an accident, we will simply use the gravity nullifiers to leave the Moon, use enough water to rocket our keel toward Earth, and reverse the field of the nullifiers so that Earth will pull us in. It would take longer to get there, but it would be much easier than trying to go the other way. For the Moon's surface gravity is only one-sixth that of Earth."

"You seem to have thought of everything," I said admiringly.

"I'm afraid not," he answered, "but we've tried to."

BARNEAU showed me how to read the navigation chart and how to manipulate the ship from the control chamber. I didn't like his air of condescension, but I never let on. He was smart, and I had lots to learn. But I did ache more than once to have him with me down in the murk of twenty fathoms in diving armor and see how smart he would be there.

George Quincy seemed the most human of them all, outside of Diana, of course. Self-confident, always used to plenty and having his way, I was surprised to see how well he behaved under the leadership of Dorrance. I could see he was falling under the spell of Diana Joyce, and I smelled trouble there, for she was engaged to Dr. Dorrance. But that was none of my business.

From Quincy I learned about the weapons aboard the *Icarus*, taken along just in case. And again I was amazed at the genius of Dr. Dorrance. Quincy had brought along his entire gun cabinet, which contained everything from a light fowling piece to an elephant gun, and he had an astounding variety of shot and shell for his arsenal. However, there were also six peculiar looking pistols in the rack.

"These," he told me, handing me one for examination after showing me how it worked, "are ray-guns. The weapon was developed by Dorrance. There is a minute charge of radium in a little chamber in the butt. It's an adaptation of the radium engine. Pressure on the trigger sets up action on the radium, and a pencil ray of pure radon shoots out of the muzzle like a flame of pale fire. It is deadly to all organic life at a distance of twenty yards. They'll probably prove of greater service on the Moon than all of my other weapons, but likely we'll not need any weapons at all. The Moon is airless, waterless, and lifeless."

I admired the entire assortment of weapons and watched him lock them carefully away.

"I guess you and I are slated to be the gun bearers and the general explorers, Armitage," he said. "I'm ready to take space-suit instruction from you any time."

"We'll get around to it as soon as I have mastered their tricks myself," I promised.

I went down to the lower level that same day and, when I had the private opportunity, dug into my tool kit, which had been undisturbed. From the false bottom I exhumed a pistol of my own, and I placed more confidence in this than in Quincy's whole stock of guns.

This was a .480 automatic pistol which fired an explosive shell. It was a new invention. The initial charge of powder was sufficient to drive the projectile fully four inches into hard oak at fifty yards, and then the shell would explode, shattering the timber to pieces. Dum-dum bullets were humane compared to it.

MAKING sure that this secret compartment had been undisturbed, I put the gun back with the several other items I had there. I went to resume my study of the space suits.

There were eight of these grotesque looking objects in a cabinet on the lower level near the sealed exit port, which had a small air-lock. They stood erect like suits of medieval armor, but there was a vast difference.

For one thing, each suit weighed six hundred pounds. It was startlingly like the deep-sea tackle with which I was familiar, with this difference: There were no lead weights. Lead was used, however, in their construction throughout. Tom Joyce explained them to me. He had drawn the specifications.

On the back was a regulation oxygen tank with a six-hour supply. The suits were fleece-lined. At the belt of each was a metal-covered valve to regulate the flow of oxygen, a rheostat to adjust the electrical heating unit, and another to control the refrigerating unit. There was a reason for this, as Joyce pointed out.

"This suit," he told me earnestly, "was designed for use on the Moon only. The temperature there in the sunlight reaches a point approximating two hundred and sixty-five degrees—more than fifty degrees above the temperature of boiling water. That's the reason for the refrigerating plant on the back. In the crater shadows, the temperature is cold enough to freeze alcohol—about a hundred and eighty degrees below zero. That's the reason for the heating element. And all those things add up to the ponderous weight."

"Not counting the pick-ax and drill and wire cable I see clamped to each belt," I commented. "And how about the guns and other items we might want to carry? Is there a gravity nullifier built into the suits?"

JOYCE smiled faintly as he shook his head.

"No," he said. "Don't forget that the surface gravity of the Moon is only one-sixth that of Earth. These six-hundred-pound suits will weigh about one hundred pounds there. Let's see, you weigh about a hundred and eighty pounds?"

"One-ninety," I said, beginning to see the answer.

"You'll weigh the equivalent of thirty-two pounds on the Moon. Encased in one of these suits, with all the extra equipment you may carry, you'll weigh less than your normal weight on Earth."

"I see," I answered humbly. "But why the lead in the suits?"

"That's for another reason," he said. "Lead is also fused in the entire helmet. We had them made specially at Corning, New York."

I examined the heavy, solid glass globes which constituted the helmets of the space suits. They looked like nothing so much as inverted fish bowls.

And thus I went on for ten days, acquiring and absorbing knowledge of the *Icarus* and of my companions. Until this moment that all seven of us were crowded in the control room, watching the rushing approach of the Moon.

Back on Earth I knew that people were seeing the Moon waxing past the gibbous

stage in the eastern sky about now, almost at the end of her second quarter, or the state of full moon. In exactly ten hours, she would reach that state. That meant that we were, or should be, approximately ten thousand miles from the Moon's orbit and roughly fourteen thousand miles from her pockmarked surface. An interesting little problem in solid geometry figured with the Moon following the arc of a curving hypotenuse. It was a bit deep for me.

I WASN'T alone in my anxiety. Dr. Dorrance, who was not an astronomer, either, put my thought into words.

"You are sure, Parneau," he asked quietly, "that your figures are correct? There's no need to change our course a bit?"

Parneau's lips parted in a thin smile. Thoroughly competent and inordinately superior because of his mathematical genius, he glanced at the instrument panel and then at Dorrance. Perhaps his own slight anxiety or tension over the accuracy of his figures being tested practically for the first time made his reply a trifle sarcastic.

"Certainly I am sure, Dr. Dorrance," he answered in his faintly accented English. "But for the benefit of all who may feel slightly alarmed"—and here his sharp, black eyes darted like rapiers from face to face, sneering at mine and softening as they rested on Diana's blond loveliness—"I will explain as simply as I can.

"Making allowance for the Moon's variation of five degrees and nine minutes from the plane of the ecliptic, I figured the time from the moment we left Earth to when the Moon would reach the full. This was by sidereal and not synodic computation. That is, from fixed star back to fixed star.

"As our speed is, in relation to the Earth and Moon system, one thousand miles per hour, and the Moon's orbital speed is twenty-one hundred miles per hour, and the distance from Earth this month to full Moon is two hundred and forty-eight thousand miles, I plotted our course by Polaris and headed us for the exact point in space which the Moon will reach in two hundred and forty-eight hours.

"Using Polaris as a spatial compass like mariners use the magnetic pole, I simply planned a rendezvous some ten hours hence with the Moon. Here we are. There comes the Moon. That is all."

66 "THANK you, Parneau," said Dorrance, not even noticing the irony. "That is sufficient. The actual navigation is in your competent hands. There have been so many things to consider and plan for—that I wonder at times if I have made any stupid blunders."

"Of course you haven't!" said Diana quickly. "I'll bet Columbus didn't think of everything when he set sail across an uncharted ocean."

"At least, he didn't take into account all the possible difficulties he was going to run into," commented Powell thoughtfully.

"Such as—the human equation," suggested Quincy, looking at the girl. "Mutiny and so forth. My history is better than my science."

Dr. Dorrance cleared his throat as he glanced from Parneau to Quincy and then to Diana, on whom he smiled tenderly.

"I don't think we need worry about the personal equation," he said calmly. "I considered that in selecting this group."

"Except for Armitage," reminded Powell dourly.

Dorrance went on as though there had been no interruption. "I also tried to think ahead for every possible eventuality. With such men—and such a woman—to check me, I don't think we've missed any important details."

Diana gave him a swift smile and patted his hand. Dorrance unfolded like a flower. I cocked an eye at Martin Powell and wondered. Dorrance was going to have trouble with Parneau and Quincy. Was I going to have the same with the formidable geologist? Was he the Heidendorff agent, and did he really know who I was? Was he laughing up his sleeve at me?

CHAPTER VI

Below Tycho

SOME thirteen hours later we were headed directly toward the Second Quadrant, not a thousand miles out from the Moon's surface. Parneau's calculations were vindicated. It was positively uncanny to watch that huge spherical ball expand there ahead of us in space and subtly change from a ball to a disc and then to a great bowl which was no longer ahead of us, but down.

"The Moon has kept her rendezvous with Etienne Parneau," said the astronomer proudly. "Dr. Dorrance, will you take over?"

"Take the controls, Tom," ordered Dorrance crisply. "Land in Tycho Crater as we planned. Powell, start magnetizing the nullifier field. Cut the rockets, Parneau. Diana, you and Quincy start checking supplies and equipment. Armitage, come with me. As the first man ever to set foot on the Moon, it's time you knew why we have come here."

I followed him to the living quarters, torn between the fearful spectacle of watching us land and the pent-up curiosity I had concerning this expedition.

"Armitage," said the scientist, as the muffled roar of the rockets died into silence and Parneau came into the room after us, "the various theories advanced to account for the Solar System do not matter here. Let it suffice that the Moon is composed of the same elements as Earth—in different proportions."

"The Moon, to be exact, is a dead planet, a child of the Earth. It formed and cooled and lived its allotted astronomical day and died before its mother, Earth, felt the first wriggle of primordial life in the ooze at the bottom of the sea. But all this you have been studying for the past ten days. It is beside the point."

"The truth of the matter is that one of the rarest elements of Earth is—radium. This precious element is procured from several

ores—carnotite and pitchblende, for example—and by the decomposition of uranium. To power the Dorrance engine we need radium in quantity. And with my electro-spectroscope I discovered months ago that the Moon is honeycombed with pitchblende. Below Tycho is a veritable mother lode. Can you understand what this means?"

"It means that the Moon can supply mankind for untold centuries with enough radium for all conceivable medical purposes, and still produce enough to power thousands of space ships and permit the exploration of the entire Solar System! Have you the vision to carry on from there?"

"Anyway, that is why we have come to the Moon, to prove two things. First, that spatial flight is possible—that the *Icarus* is a practical success. Second, that radium can be reclaimed in large quantities. Man is no longer bound to his native planet. The Moon is virtually a gold mine for man beyond the dreams of avarice."

THINGS began to fit into a rounded and complete picture for me.

"So that's why the lead is in the space suits and helmets," I said. "Radioactivity."

"Precisely," agreed Dorrance. "I don't think the emanations will be strong enough to be dangerous, but I am taking no chances on anything. That's why Quincy has brought so many weapons. We know the Moon is dead and lifeless, but I can take no foolish risks. After you test the efficacy of the space suits, we will establish a base in Tycho and mine enough radium to replace that which Quincy took by force—twice over."

"We will be millionaires!" breathed Parneau. "*Mon Dieu*, I can hardly believe it."

Quincy and Diana came in at that moment, the girl laughing gaily at some remark her companion had made. I listened silently while the four of them talked excitedly.

"Aren't you excited, John?" Diana demanded of me. "I don't believe you've voiced an opinion thus far the entire voyage."

"Yeah," I answered laconically. "I'm thrilled to death."

Quincy cocked an eye at me.

"Getting cold feet, Armitage?" he asked, chuckling. "I'll make the first sally outside if you're afraid."

"A man who wouldn't be afraid is a fool," I said curtly. "I never made a descent without wondering if I was going to get back to the surface without an accident."

QUINCY laughed, fairly blooming under Diana's admiring glance. "Better let me make the first try, Dorrance. Armitage is in a funk."

Dorrance looked at me dubiously, while Parneau openly sneered. I felt Diana's violet eyes searching my face for signs of cowardice, but I made no attempt to explain or justify my natural feeling.

"I'm going to watch Joyce land this thing," I said, making for the control room. "You can go along with me, Quincy, since

you're so anxious to cover yourself with glory—only if you are willing to obey my orders."

I went out before the millionaire answered. They all trooped after me to the control room.

The picture had changed during the interim. Instead of the muted roar of the rockets, there was now the steady hum of the dynamos pouring the power to the gravity nullifiers. The *Icarus*, under Tom Joyce's skilful handling, had turned her keel to the lunar surface and was settling rapidly.

Under the momentum of our flight, we were still traveling at a terrific speed at an oblique angle toward the face of the Moon. The huge crater that was Tycho was dead ahead—fifty-five miles in diameter and twelve thousand feet deep. Instead of the soft yellow luminance we see from Earth, the lunar landscape was like a bad dream. Because of the airless condition, everything was revealed in stark relief. It was a world of crags and craters marked by sharply defined shadows and dazzling sunlight. There was no intermediate shade between black and dead gray white.

Tom Joyce braked our forward speed with a red blast from the forward rockets and then set us down almost in the center of Tycho as lightly as a feather. There was the dull crunch of rock beneath our hull, a slight lurch, and the *Icarus* was at rest.

Joyce adjusted several controls, flipped a switch which started the refrigerating apparatus of the ship—for the temperature would start to rise immediately with the reflection of the Sun from the terrible surface about us—and turned to shake hands with Dorrance.

"Alfred," he said heartily, "let me be the first to congratulate you. Your dream has come true."

IN a moment they were all shaking hands and talking. Dorrance, tears of happiness in his eyes, stood with his arm about Diana's shoulders and accepted the shower of praise.

"Thank you, thank you," he said in a voice that trembled a little. "You people have been instrumental in making the dream come true."

"Come on, Quincy," I said at last. "We've got a job to do."

Maybe I was like a glass of cold water, but why not? I wasn't really an integral part of this crew. I was actually an outsider, and I felt like one about now. I dampened the enthusiasm. I was wondering if there was for a fact a Judas in this crowd.

"So the deep-sea diver is afraid," said Parneau nastily. "Out of his depth, eh?" "Out of his element, rather," chuckled Quincy. "Let's go, Armitage."

"Wait!" said Tom Joyce, glancing at Dorrance. "Perhaps I ought to make the first test. After all, you and I designed these suits, Alfred."

"This is my job," I said shortly. "I never dodge jobs. I go first. I'm taking Quincy along only because it seems safer to work

in pairs. But I'll lead."

To tell the truth, I'd much rather have had Powell than any of the rest, but I hadn't made up my mind about the geologist yet. I figured the powerful, dour Powell as the best man to have at my side in an emergency, but we had a personal equation to settle between us.

Dorrance and Joyce helped Quincy and me into our space suits while the others stood by and watched. I had already carefully tested the equipment of every suit, but I methodically went over all the controls at my belt before letting Dorrance seal the globular helmet on for me.

"I'll go out first," I said. "If everything is okay, I'll signal for you to come on, Quincy."

"Good luck," said Diana softly, just before Dorrance lowered the helmet over my head.

I adjusted my oxygen valve, set the refrigerating unit at sixty degrees, and signaled for Powell to close the air-lock on me. In a moment the ponderous outer lock opened before me and, with the escaping air, I stepped out upon the rocky lava of the Moon.

In spite of the prodigious weight, I felt pounds lighter than usual. I moved easily out from the shadow of the long, cigar-shaped *Icarus* into the full sunlight and got my first exterior view of the craft which had brought me two hundred and forty-eight thousand miles from home.

THE *Icarus* glittered in the sunlight, a long and slim beauty of a torpedo of space. I made my first note for subsequent correction. In the full sunlight we needed smoked glasses or a visor arrangement on the helmets that we could adjust with our hands. It was impossible to stare toward the Sun. Otherwise everything seemed to be functioning perfectly. I knocked three times on the hull for Quincy to emerge.

Quickly he joined me, and we started walking in a wide circle about the space ship.

"What say we make toward the mountains on the left?" suggested Quincy through his radio phone, becoming bold with his habitual recklessness. "This ring-around-the-rosy stuff is childish."

I agreed. I wanted to investigate some black spots over there a couple of hundred yards anyhow. The soil of the Moon was harshly gray. It seemed volcanic in origin. Certainly it was waterless. But that would be Powell's job.

Impatient to explore, Quincy set out at a brisk pace toward the distant crags. I, perforce, followed more rapidly than I wished. At that Quincy reached the first of the black spots on the ground before I did. He halted abruptly and stared down in perplexity. I'm sure he hadn't even noticed them until now.

The first spot was an almost perfect circle, looking like a disc of black velvet stretched flat on the surface. It was perhaps ten feet in diameter. It was so black that we could distinguish nothing within the circle.

I raised my gaze to stare beyond, and I

counted six more of these queer spots ahead of us, in a straight line and apparently regularly spaced. Then I turned to touch Quincy and speak to him. I was just in time to see him place a foot tentatively within the perimeter of the black spot. Before I could grab hold of him and jerk him back, he flung up his arms wildly, like a man off balance, and toppled forward, to disappear from sight exactly like an object being sucked under extremely liquid quicksand.

WITHOUT wasting time cursing his confounded impetuosity, I snatched the pick from my belt and thrust one end of it out over the black spot. Nothing happened. I prodded at the spot—and nearly lost my own balance. Nothing had resisted my poking. And I understood with a sinking heart. The spot was not a spot. It was a hole, a Stygian funnel without a ray of light to reveal it for what it was. Only when the Sun was directly overhead did any light shine down the sides of this cylindrical shaft. Such was the deceptiveness of light and shadow on the Moon.

I grabbed my hand torch next and switched it on. At once the stark and horribly smooth wall of a perpendicular shaft leaped into relief for me. I lay down and carefully thrust my arm and head over the edge. Far below, perhaps thirty feet, like a specimen upon the field of a giant microscope, lay the figure of George Quincy. He was sprawled out on a level enough surface, but he appeared unconscious. Rapidly I tried to compute how hard he could have fallen in six hundred pounds of space suit at one-sixth of Earth's gravity and at, to me, an unknown rate of speed.

All the time I was feverishly at work. I used my hammer to drive my short drill into the hard but crumbly rock close to the edge of the hole. Then I fastened one end of my wire cable to this anchor and swiftly lowered myself down the shaft. I suppose Quincy's magical disappearance and my own subsequent actions must have looked crazy to the rest of the party in the *Icarus*, and I could well believe they must have been frantic with anxiety—Diana, at least—but I hadn't time to think of them now. If Quincy had cracked his helmet.

THE wire cable was fortunately the right length, as if it had been measured. Otherwise, I don't know how we could have reached the surface again. When I got down to Quincy, he was already stirring. I knelt and hurriedly examined his suit and helmet. They were intact. I stood up and flashed my torch around.

To my amazement, I found that I was standing in a tunnel, a circular shaft of incredibly smooth sides that led downward at a gradual angle from this hole in the outer skin of the Moon.

Quincy sat up, unable to rub where he ached. There was a rueful expression on his face and his lips were moving. I gave him a hand to his feet as his voice sounded in my earphones.

"Silly sort of trick, wasn't it? Reminds me of a tiger pit in India. Never thought I'd fall into such a trap."

"Yes," I said, answering his first remark as I switched off my refrigerating unit and turned on the heating element. "Better change your temperature control. It's a hundred and eighty below down here. Feel able to climb?"

"Climb? What for? Let's explore this crazy shaft, now that we're here."

I didn't say anything to him. What was the use of an abstract argument about the danger of exploring such an artificial tunnel with a man as courageously foolhardy as he? Besides, who knew how old this tunnel was? What creatures or beings could possibly live on an airless, waterless world?

We set out along the tunnel, I in front, torch in one hand and ray-gun in the other. Queerly, I found myself wishing for my own .480 automatic back on the *Icarus* in my tool kit. Quincy was all for pushing ahead recklessly, arguing that we only had six hours of oxygen, which meant less than three hours forward travel if we expected to return.

BUT I wasn't figuring on getting lost in a lunar labyrinth that had likely been here before mammals appeared on the face of Earth. As we proceeded, other tunnels began to run into the one we were following into the bowels of the Moon. They all forked in like the branches of a tree toward the bole, but I called a halt methodically at each juncture and used my pick to cut an arrow in the floor of the branch out of which we came.

"Why all the precaution?" demanded Quincy impatiently. "We're traveling in a straight line, and all of the side tunnels join this one and lead downward. The other way, they all lead to those surface holes."

"We may want to go back in a hurry," I reminded him grimly, "and I want to go back to the hole where my cable will hoist me to the surface."

This silenced him. We kept on until we had penetrated about ten miles and must have been half a mile deep. The way had become monotonous, and I saw by the electric watch at my belt that we were dangerously close to the half-way mark.

"This is as far as we go," I said, reaching out to grip my companion's arm.

"You're worse than an old woman," responded Quincy. "We've still got ten minutes before we reach the three-hour mark. Looks like a curve ahead. Let's push on for five minutes more."

Shrugging, I led on. Quincy proved right at that. Three minutes later we rounded a wide curve in the inexplicable tunnel and found ourselves on the threshold of a huge sublunar cavern. There were numerous shafts leading off from this chamber, and I carefully marked ours with an arrow. Then we started to make a hurried circuit of the immense enclosure which our hand torches could not span.

THE walls between the mouths of the queer shaftlike tunnels were rough and irregular, seamed and veined with various strata of brown and black which wickedly reflected the beams of our lights. We

couldn't have made a circuit of more than a quarter of the roughly circular cavern when something white moved in the ray of my torch.

We froze in amazement. Life—here? The thing was shaped like a log, about six feet long and a good foot through. It lay against the wall, one end in a sort of alcove *which it had eaten out of the wall* with a pair of mandibles similar to those of a tiger ant.

As we watched, it dug into the hard rock of the wall like a mouse biting into cheese and shoveled the rubble into its maw. It moved sluggishly, as though it had all the time of the ages. Under the glow of our torches, it was dully white and seemed surrounded with a faint, pale blue aura—like a sickly ectoplasm.

"Good God!" Quincy's voice sounded in my earphones as he clutched my shoulder. "A giant termite that's a rock eater!"

He released me and drew his ray gun. I grabbed him.

"Don't!" I commanded, flashing my torch along the wall.

In the glow we counted not less than a dozen of the weird things, working away in little niches of their own. The light seemed not to bother them at all. Experimentally I switched off mine, telling Quincy to do the same. In the resultant pitch darkness, each of the gigantic slugs emitted a faint bluish glow. There were hundreds of them!

"Glow-worms!" whispered Quincy. "What is this?"

I switched my torch back on. "We've got to get out of here. Time's up. Let's see what this thing is eating."

AT my suggestion, Quincy instantly stepped forward with his usual fearlessness and flashed his torch against the alcove. His foot touched the side of the slug. The thing didn't move, and he drew back his metal-encased foot and deliberately kicked the thing gently.

"Feels like metal," he said to me. "Try it."

"No, thanks," I answered, staring at the queer veins of stuff in the alcove. They were brown-black metalliferous veins with a pitchlike luster.

On impulse I scooped up a chunk of the stuff and put it in the specimen case attached to my belt.

"Whatever this thing is," announced Quincy, who had gone on with his risky examination, "it's insensate and blind. Damned if I don't believe it's a metallic form of life."

"Powell or Dorrance may be able to tell," I said. "Come on!"

We got out of that ghastly cavern and headed up the tunnel toward the surface at a fast pace. The arrows I had cut in the mouths of the tunnels now stood us in good stead. Our oxygen was almost exhausted by the time we reached the end of the shaft and found the wire cable. Two figures in space suits were weirdly outlined in sunlight at the top of the hole. They proved to be Powell and Joyce, come to see what had happened to us.

We got back to the *Icarus* at once, and

Quincy told our story.

"We wouldn't even have gone that far if I'd listened to Armitage," he concluded in his bluff way.

"But I goaded him on until we ran into that alien life-form. What do you think it can be, Dorrance?"

"I don't know—yet," admitted the scientist. "Since the grubs seem harmless, we'll go have a look at them. Powell and I."

"I'd like to know what they were feeding on," said Powell soberly.

"Here," I said, remembering. "Here's a chunk of the stuff."

Powell and Dorrance took one look at the stuff I pulled out of the specimen case on my space suit.

"Pitchblende!" they both shouted together.

"What did I tell you?" added Dorrance. "I knew the electroscope was right."

And then I remembered the fragment of conversation I had overheard upon first entering the Dorrance home, when Tom Joyce walked up behind me with a gun. Dorrance had been telling Diana about Parneau checking his discovery, and I had been too dumb to grasp his meaning.

CHAPTER VII

The Lunar Borers

FORGOTTEN was any thought of exploring the surface of the Moon. It was worse than a gold strike in Nevada. Radium was dearer than life or scientific knowledge to this expedition, more precious than water or oxygen—of which we had sufficient quantity. All of them went mad over our discovery, even Parneau, who should have been in an astronomer's seventh heaven, studying the Universe with the telescope of the *Icarus*, unhampered by an atmosphere.

Only Quincy and I were the least affected, for reasons of our own. I knew Quincy's secret, but he didn't know mine. Quincy was already rich. He could easily pay for the four grams of radium he had hijacked and thus buy his way out of trouble. He was a pagan at heart and an insatiable adventurer. All he asked of this expedition was excitement. All he wanted was Diana Joyce.

I had indisputable proof of this during one rest period, when just the three of us were aboard the *Icarus*. The others were down in the Tycho cavern, manning the mining machinery and refiner. This was three days later. I was making coffee on the electric hotplate in the little galley, and Diana and Quincy were together in the observatory at the rear of the ship. The telephone system was open, and they didn't know it. Without intentionally eavesdropping, I overheard an interesting conversation.

"But, Diana, aren't you sick of this monotony?" Quincy was saying, and a tender, possessive quality came into his tone. "Don't you feel the urge to explore, to investigate? Let's leave those moles to grub away at their pitchblende, while you and I see what's on the other side of the Moon."

"What in the—Moon are you talking about, George?" asked Diana, her voice trembling a little.

HERE were sounds of quick movement, a slight scuffle. Then:

"Diana," came Quincy's voice, vibrant with passion, "you know I'm mad about you. Why don't you tell Dorrance? He's twenty years older than you and all wrapped up in his science. We're young and—"

"Don't, please," the girl gasped. "Let me go, George. You don't understand. Tom and I owe a great deal to Alfred Dorrance, and he loves me."

"But you don't love him!"

"But I do," she corrected swiftly. "And I respect and revere his work, helping all I can. We cannot jeopardize what he is doing by setting out on a mere adventure. The Moon can be explored on subsequent trips."

"Kiss me," demanded Quincy. "I dare you to kiss me and then talk like that."

"Please! I don't want to kiss you, George."

There were unmistakable sounds of a kiss, and an exclamation from the girl.

"See?" exulted Quincy. "You are blushing. Now say that you don't want to chuck all this and go exploring—even down through those inexplicable tunnels."

"But I don't," she protested angrily. "I want—"

I put my lips close to the loud-speaker in the galley.

"Perhaps the lady wants a cup of coffee, Quincy," I said. "It would be more satisfactory."

Utter silence answered me. In a moment the two of them came into the living quarters. Neither of them looked greatly disconcerted.

"So you heard?" said Quincy, laughing slightly. "I suppose you'll run to Dorrance."

"People as indiscreet as you, Quincy," I answered, "shouldn't be around telephones or microphones. There's nothing for me to report to Dorrance. Cream in your coffee, Diana?"

The girl looked steadily at me. She offered no excuses or apologies for Quincy's actions, and I liked her for that.

"Yes—cream," she replied. "Are you a mechanical robot, too, Jack Armitage? Don't you ever have human emotions?"

I LOOKED deeply into her eyes and then glanced at Quincy.

"You'd be surprised," I said, and didn't add what I was thinking about fools rushing in where angels feared to tread.

But I'm getting ahead of myself. Immediately upon Quincy's and my return from our discovery of the cavern under Tycho, nothing would do but that we move the *Icarus* over to the black hole and make a permanent camp there. Within twenty-four hours, the entire seven of us were ready to return to the spot of the feeding grubs.

Loaded down with machinery parts, extra oxygen tanks, supplies, we all went down to the sublunar cavern. Diana wouldn't hear of remaining behind, and everybody was needed to carry equipment, anyhow. So seven fools left the comparative safety of the *Icarus* and descended a wire ladder into the entrance to hell.

Before I made my first return trip, I went

to the oxygenator room and dug into the false bottom of my tool kit. I removed a couple of items, including my gun, and stowed them in the belt pockets of my own space suit. From then on I felt a trifle better during my various excursions to the rich deposit of pitchblende.

Powell studied the curiously glazed walls of the tunnel carefully on that first trip.

"Igneous rock," he announced. "Patently of artificial formation. Fused in a glaze under intense heat. Age indeterminate under these waterless, airless conditions. Think those slugs of yours could have made these tunnels, Quincy?"

"Don't see how," responded the millionaire. "These tunnels are too big."

WE moved forward. Without incident we reached the cavern. Here, to my uneasy surprise, there wasn't a sign of the giant slugs Quincy and I had seen there not much more than twenty-four hours ago. Nothing remained but dozens of alcoves and pockets in the irregular perimeter of the cavern. As though by some preconcerted signal, possibly because they had been disturbed after all by the two of us, the huge slugs had disappeared.

Quincy was all for trying to trace them through the numerous cavern and tunnel mouths, but Dorrance and Powell saw the veins of pitchblende—and that precluded all other exploration.

"They'll likely return at their next feeding time, whatever they are," said Dorrance. "We're here for radium. Let's set up our equipment and start mining. Later, perhaps, we'll have time for other things."

And that's the way it was. For four days we packed supplies to the cavern, set up Dorrance's machinery, and mined in shifts with the monotonous regularity of a Pennsylvania coal mine crew. Man the digging screw and the engine, carry supplies, eat and sleep. Dorrance and Powell handled the refining process of the ore and stored the radium in heavy lead cartridges, which we carried back to the *Icarus* and stored in a special rack.

It settled into a humdrum business. And there was no reappearance of the queer slugs. No wonder Quincy got ants in his pants.

Dorrance himself precipitated matters the fifth day with an announcement.

"We've got nearly a pound of pure radium," he told us. "The Moon is incredibly rich in the ore, and my adaptation of refining through the radium engine has speeded up the process until it is simple to reclaim the radium from the pitchblende. But we are not prepared to spend much longer time here. The lunar night will be upon us in two more days. So we shall head back for Earth the day after tomorrow morning. On our next trip we can bring a larger ship—a dozen of them—with plenty of supplies and men for mining and exploration."

THIS announcement caused very little discussion. Parneau was astonished at the amount of radium recovered and he remarked about that. Quincy said nothing.

He had been oddly quiet since that scene with Diana, but I knew that he must have felt a big sense of disappointment over the tameness of what he had expected to be a great adventure.

Powell and Tom Joyce, closer in the confidence of Dorrance than the rest of us, must have known of the decision before. At least, they did not seem surprised or disturbed. Diana was patently relieved. As for me, I wasn't going to breathe real easy until I set my foot back on Mother Earth.

Upon moving the small radium engine down to the cavern, Powell had made temporary wiring connections to hook up the big engine, to take over the necessary duties aboard the *Icarus*. Now Dorrance decided to leave the small engine set up as it was against his return on the second expedition. Thus, the fifth morning I stayed with Powell to help make the wiring change permanent and secure aboard the ship. Diana was busily checking supplies. Joyce and Quincy took the first shift below.

Later, Dorrance and Parneau went down to relieve them. After an interval of several hours, Powell told me he could finish up alone. So I sought Diana and, after a bite of lunch for the three of us, she and I went down for our last turn at pitchblende mining.

We strode, glove in glove, down the now familiar tubular ramp. As usual I moved in taciturn silence, but I was pleasantly aware of my companion's nearness, in spite of the intervening thicknesses of two heavy space suits.

"You don't like any of us, do you, Jack Armitage?" she broke the silence at length. "On the contrary," I said, slightly startled. "I simply have a job to do, and I'm doing it to the best of my ability."

"Obviously," she said a bit shortly. Then: "You haven't talked about yourself at all. Do you know, you are almost a stranger to me—even after this close association on a voyage which should bind us all closer than—than relatives."

"Even after your check-up on my credentials that first day?" I asked dryly. "You know a lot more about me than I know about you."

"What—what would you like to know—about me?" she asked hesitantly after a long silence.

"Right now, nothing," I said. And I was telling the truth. I had too much to think about without complicating my thoughts with the fiancée of Dr. Alfred Dorrance. I was satisfied in my own mind that neither she nor her brother were mixed up in a European spy ring.

This rebuff shut her up. We walked the rest of the way in silence. I think she would have pulled away from me in anger, had it not been for the ghastly loneliness of marching through that bizarre tunnel in utter silence and without the contact of a fellow human being in that alien world.

We reached the cavern to find Dorrance and Parneau busily at work with the machinery. A string of lights had been erected for visibility, and it was easy to distinguish identities through the transparent globular

helmets. Dorrance was bending over the engine, while Parneau was watching the boring screw and the disappearance of the ore into the tank where it was refined.

I touched Dorrance on the shoulder.

"Where are Joyce and Quincy?" I asked.

HE looked up. His eyes widened as they rested on me. Then he glanced swiftly around the huge cavern.

"Aren't they at the ship?" he demanded. "They left here together hours ago."

Because she was still gripping my hand, I felt Diana jerk in alarm.

"George Quincy!" she exclaimed. "He wanted to explore. I heard him talking to Tom yesterday about penetrating deeper along these queer passages. When you said we were to leave tomorrow, Alfred, he—"

She broke off in dismay. I almost groaned aloud. Parneau came over and made contact with us.

"What is it?" he asked sharply, his eyes darting from face to face.

"Tom and Quincy have disappeared," explained Dorrance.

"They can't be far away," said Parneau. "They went through that fifth tunnel yonder, now that I think of it."

He pointed to the shaft almost opposite the one we used to reach the surface. Grimly I examined my hand torch and other equipment.

"What are you going to do?" Dorrance wanted to know.

"Go after the fools," I said.

"I'm going, too," declared Diana.

"No!" I ordered tersely. "You stay here. I won't be long—I hope."

I trudged out of the cavern, the three of them watching me go in troubled silence. Boldly I plunged into the darkness of a tunnel which might lead me to the very bowels of the Moon, and inwardly my heart was quaking.

I must have progressed all of five miles without incident. The queer treelike pattern of forking tunnels continued in mathematical precision just as on the upper side of the huge cavern, all converging into one and leading downward. It was borne in on me with crushing force that, not only had these tunnels been built artificially, they had been constructed by creatures of intelligence.

AT each branch I stopped to cut an arrow in the curving floor, and I found it unnecessary. Quincy and Joyce had been along here ahead of me, and Quincy had had sense enough to employ this simple method of marking.

Then I found it. It was nothing more nor less than one of the six-foot slugs. It lay lengthwise along the corridor, a rock drill driven into its head end just behind its queer armlike mandibles. It was dead, and I recognized the Quincy touch.

"Fool hunter!" I muttered to myself.

The thing was pointed the other way, as though it had been trying to escape when Quincy and Joyce overtook it. I halted long enough to examine the unearthly grub. Quincy had been right about its texture. Its body seemed to be composed of serrated

rings of metallic tissue. When I tried to remove the drill, it was like trying to pull a wrecking bar out of a sheet of armor plate. It took all of my considerable strength to remove it.

A thick, viscid, dark liquid welled out of the hole, hardening to stone almost instantly as it met the terrible cold which existed here. Its nature was indeterminable, but it was oddly iridescent, like tar. I wasn't surprised. Anything that could live on pitchblende would have a queer sort of life blood.

At that moment I felt the tremor through the floor of the tunnel. I couldn't hear anything, but I felt the faint vibration. It didn't have the feel of a quake, rather more like a passage of a heavy body across a bridge. I threw down the drill and went ahead at a dog trot, anxiety and fear gnawing anew at my vitals. I found time to wonder if Quincy had killed the slug with his ray-gun and then had tried to perform an autopsy, or if he had simply driven the drill into the creature to administer the death blow.

Suddenly I had no time to wonder anything like that. I rounded a curve in the descending tunnel and came upon another cavern. But what a difference from the upper one! Around the walls, as far as I could glimpse, were hundreds of the six-foot slugs busily gnawing away, serenely wrapped in their faint mantles of bluish aura and impervious to all that went on about them. But my eyes were fastened on a more terrible sight.

UT from the mouth of my tunnel about fifty feet stood two space-suited figures, Quincy and Joyce, wildly raving a nightmare before them with torch and ray-gun. The thing they confronted was a huge worm with pale underbody and greenish back. It was like and yet unlike the little-slugs.

It was all of thirty feet long and fully eight feet in diameter, more like a fabulous sea serpent than a worm. Reared up so that it towered above the puny figures of the two men, it had a head like a bad dream. The face of a dragon, with two enormous red eyes that stared into the blinding light of the torches, without blinking or flinching. From the wide slit of a mouth flickered living flame. Two armlike mandibles writhed from its face like the mustache of a Chinese mandarin and with the agility of eels.

The streams of pure radon seemed to have not the slightest effect upon the hideous monstrosity, but that was not the worst. Crawling forward upon its hapless victims with the ponderous speed of a freight train, it had a gleam of awful and malignant intelligence in its red, foot-wide eyes.

"My God!" I cried, reverting to my childhood fairy tales. "A fire-breathing dragon!"

CHAPTER VIII

The Heidendorf Agent

HORROR-stricken, I stood there in the mouth of the tunnel for an instant. Why didn't those radon beams kill that awful thing? There wasn't a chance for Quincy and Joyce to run. Their only hope of escape was attack.

Then I dimly understood. Quincy had been right again when he had called the slugs giant termites. They were the larvae of the intelligent serpents—those grubs. I began to comprehend the system of tunnels that had been constructed by these fire-breathing borers, which lived and bred within the crust of an airless, waterless world.

No wonder the surface of the Moon looked like the face of a gigantic beach just after sea-worms have burrowed in. In the dim and distant past, these Gargantuan borers must have lived on the surface. Maybe they still used it. I thought of those holes which dotted the floor of Tycho.

How did these things exist? Only a ghastly marriage of the mineral and animal kingdoms could have produced this animate but alien life that lived upon pitchblende. That was the reason radon had no effect upon this worm-dragon! The accursed thing was radioactive, of course. No wonder the grubs had that ghastly emanation. Radon to the borers must be like concentrated glandular extracts to humans.

Just then the borer thrust forward its dragon head. Flame leaped out like a lance from an acetylene torch. The blue fire played upon the figure of Tom Joyce, outlining him in an aura of ghostly splendor. Then he simply melted—melted down like butter under a blaze! It was horrible!

Quincy turned to run, his face twisted in revulsion and despair. At that instant I had my .480 in hand and was leveling it squarely between the soup-plate eyes of the borer. I squeezed the trigger. There was no sound, of course, but I felt the recoil.

The borer's head quivered back, and I swear I saw a look of surprise in its huge eyes as it focused its basilisk gaze on me. There was only time for a fleeting impression. The next instant, before the thing could overcome the shock of the physical blow of that penetrative bullet, its head simply disappeared—blown to pieces by the explosive shell.

The creature flopped flat in the grip of a convulsive death struggle that made the floor of the cavern tremble beneath my feet. I was conscious of a fleeting sense of pity for the horror. After all, Quincy and Joyce had been guilty of killing one of the slugs for no reason at all. And all around the perimeter of the cavern, the hundreds of blind slugs calmly ate away at the veins of pitchblende, serenely unaware of the death of one of their progenitors.

I don't think Quincy saw me until he ran into me. Then he grabbed me in sheer hysteria. I was feeling mighty shaky by then myself.

"Armitage!" he croaked. "Poor Joyce! Let's get out of here. Quick! We can't kill that salamander. I—"

"Get a grip on yourself!" I said tersely. "It's dead. Look."

QUINCY took one glance over his shoulder and shuddered. But he began to calm down.

"Explosive shell?" he guessed at once. "Where'd you get the gun? These damned ray-guns didn't even bother it."

"Of course not," I said. "These things are radioactive. We'd be full of radium burns by now if it weren't for the lead in our suits and helmets. Come on. There isn't enough left of Joyce to take back. You were right about this being some kind of a termite nest. They let us take over the upper cavern without protest, but you and Joyce went a step too far. Who killed that grub up in the tunnel?"

"I did," admitted Quincy. "I had to use the drill to do it."

"Fool!" I almost snarled, and he blinked at me unresentfully.

That borer I had slain had had intelligence. I was now sure that there must be a sort of telepathic bond between grub and borer. And man, with his usual crass presumption, as typified by Quincy, had declared war by making the first kill. I knew that not only did we have to get back to the *Icarus* in a hurry, but that our lunar expeditions might be altogether at an end. Indeed, we might not live to reach the surface of the Moon.

"Let's get out of here," I said, "before more of these things show up."

WE started rapidly up the incline toward the first cavern.

"Joyce and I wanted to have one look at these lower tunnels before we left the Moon," Quincy began explaining. "Joyce wanted to see some of the slugs if we could find—"

"Save it!" I cut him off. "Do your explaining to Diana."

That got him, but I wasn't sorry for him. He needed a hell of a good lesson. If we hadn't been incased in space suits, and in such imminent danger, I would have worked him over on general principles myself. But I was thoroughly satisfied about him now. Such a reckless idiot could not possibly be an agent of the Heidendorf Ring.

With Quincy using his torch to light the way and search out the proper tunnel, I covered our rear and watched for any evidence of hellish pursuit. That flight up to the first cavern was quite horrible. The death of Tom Joyce weighed heavily on me. The whole thing was a nightmare.

It was the silence that distressed us. Any tremor of pursuit we could not feel, because of the vibrations of our own passage, and we could hear nothing in that airless catacomb save the sounds transmitted over our radio phones. I think I never liked Quincy after that because of the sounds of his labored breathing which wheezed asthmatically against my earphones.

But nothing appeared to follow us up the long, shaftlike corridors. Quincy had practically regained full control of himself by the time we burst into the mining cavern. And here an amazing tableau greeted us.

Standing with his back to us, under one arm the most recently filled lead cartridge of radium, was Etienne Parneau. In his right hand he gripped his radon gun with which he was menacing Dorrance and Diana. He was unaware of our approach, the vibration of the machinery covering the tremor of our arrival.

From one kind of horror to another. I

motioned Quincy to silence and indicated that we were to sneak up on the little astronomer and grab him. Quincy didn't understand the situation, but he could act in a normal sort of emergency. He started to launch himself forward, but Diana proved our undoing.

At sight of us her great eyes widened in that characteristic mannerism of hers, and Parneau whirled like an oiled swivel. He leaped backward to bring both of us within range of his arcing ray-gun.

Quincy stopped dead. He had long ago lost his own ray-gun in that sublunar chamber of horrors. I couldn't fire at Parneau with my own .480 because I knew it would kill him even if I only punctured his space suit. And I didn't want to do that. So I hooked my insignificant looking weapon to my belt and cast hurriedly about for some way to terminate this crazy impasse before it was too late.

"So you two came back!" snarled Parneau. "Get over there with Dorrance—quick! You had just as well die here with him. Armitage must have got lost trying to find you. It's just as well."

Obviously he mistook me for Tom Joyce. Warily we moved out and circled around him to approach Diana and Dorrance.

"Fool!" Parneau resumed, speaking to the scientist. "Do you think I would let you take back this discovery and give it to all the world?"

"Are you mad, Parneau?" asked Dorrance in consternation. "What have I done to cause you to—"

"What have you done, *Dummkopf*?" cried the astronomer. "It's what you intend to do. Prating about building dozens of space ships and bringing hundreds of men here to steal this radium. Was it not crazy enough to dream of giving your radium engine and gravity nullifier to the whole world? You—"

"What the hell's eating you, Parneau?" roared Quincy in rising anger. "We haven't time for you to crack up now. There's a terrible thing happened. We've got to—"

"Shut up!" ordered the astronomer savagely. "Diana, for your sake, I will permit your brother to return to Earth with us, but the others must die. Even Powell shall die if he disobeys me. I can navigate the *Icarus* alone if I must. Joyce, if you value your life and that of your sister, come and carry this cartridge of radium. *Mach schnell!*"

I started to advance. This was too good an opportunity to grab and disarm the maniac. But, of course, it wouldn't work. He darted his foxlike eyes at me and recognized me.

"Armitage!" he snapped. "Halt, or I will kill you!"

He hopped agilely back and around until he stood with his back almost squarely to the mouth of the tunnel from which Quincy and I had emerged.

"Where is Joyce?" he demanded.

"Dead," I said, still moving slowly forward. "Put down that ray-gun, you fool. This is no time for melodrama. All of us are in terrible danger."

PARNEAU began to laugh insanely, but he leveled the gun firmly at my helmet. "Stop! Of course, you are all in danger. Did I not say it? I am going to maroon you here on the Moon. In your last moments you can blame Alfred Dorrance for your plight. Diana, start up the tunnel, *Liebchen*. I will gather up the ray-guns and follow."

"What is the matter with him?" cried Dorrance, thoroughly befuddled.

"Plenty," I said succinctly, halting while I weighed what I knew about these space suits against what I thought of the radon gun's efficacy. "He's the agent of what is known to the U. S. Secret Service as the Heidendorf Ring. I knew it had to be either him or Powell."

"Hah!" shouted Parneau. "So you are a Government spy, after all."

"I represent the United States, yes," I said. "And I know that you, the son of a French father and a German mother, are the agent of Dr. Heidendorf, who is one of the heads of a certain European power that seeks the dominance of the world."

"Fool!" howled Parneau, raging. "I am Dr. Heidendorf!"

That one staggered me. I had already narrowed my suspects down to Parneau and Powell, rather favoring Powell because he was such a good mechanic—and the past Heidendorf disasters had been engineered by mechanics. Of course, Dorrance's decision to leave the Moon, and his general intentions had flushed Parneau out into the open before I could trap him, but that he was Heidendorf in person was a shock.

I understood a number of things now that had baffled Colonel Ormsley. No wonder Dr. Heidendorf had been so elusive. Hidden behind the well known identity of an astronomer of note, a man who traveled all over the world at will, the ruthless spy master had been in on the know of every new scientific achievement of value and could lay his terrible plans in secure impunity. Great men of all countries threw wide their arms and welcomed him in, innocently furthering his dark and nefarious plotting. And Heidendorf had so realized the importance of Dorrance's experiments that he had taken the field in person this time.

The madman, so sure of himself, was raving on. "And that impractical dreamer of a Dorrance refused to dicker with me for his inventions. He thought to circumvent me by refusing all negotiations. He wanted to give his discoveries to the world—to offer the Moon to mankind. Dorrance, you *Schweinhund*, did you think to escape from my power? Visionary and blundering idiot that you are, you shall die here on the Moon, while Diana and I shall enjoy with the Fatherland the fruits of your—"

Something must have snapped in Alfred Dorrance. I don't think he resented the personal insults, perhaps not even the reference to Diana Joyce, but the thought of all this for which he was responsible being denied all of mankind made him desperate. He uttered a terrible shout and hurled himself forward, straight at the treacherous astronomer.

Everything happened then at once.

Parneau flipped his gun around in a short arc and squeezed the trigger. The pale blue ray of radon played full on the globular helmet of Dorrance. For a second he stood transfixed as the terrible force of that beam bored into his brain. Then he crashed headlong to the floor before I could get my automatic unhooked.

At that instant Diana screamed. There in the tunnel mouth behind Parneau, or Dr. Heidendorf, appeared a dragon's head. Two baleful red eyes gleamed upon us. And then a flame of blue fire shot forth like a flash of lightning and engulfed the perfidious astronomer. He never knew what killed him. Like a tissue paper doll in an electric oven he melted away. There was a brief white flare as the pure radium was consumed.

CHAPTER IX

Eagle of Space

JUST like that, I had found and lost my man all in the same minute of time.

Quincy, unarmed, was helpless. But before that awful monstrosity could emerge into the cavern, before it could lance out that terrible sword of flame and incinerate the rest of us, I raised my special gun and triggered one shot squarely between those horrendous red eyes.

The result was precisely what it had been before, down in the lower cavern. The borer's head simply leaped to pieces, and I blessed the man who had perfected this deadly hand gun. The ghastly worm died there in the tunnel, effectually blocking the way with its body, while the viscous black blood oozed out of its neck stub, to harden almost instantly into stone.

"Quick!" I shouted at the stupefied Quincy as I caught hold of the fainting girl. "Pick up Dorrance's body and start moving."

"The termites followed us," he muttered stupidly. "They got Parneau, just like they got Tom Joyce."

This remark snapped Diana out of it better than anything else could have. She stopped swooning and shuddered back to consciousness.

"Tom?" she cried. "Then he really is dead? Like—like that?"

"Yeah, and all the rest of us will be, too, if Quincy doesn't shake a leg," I said harshly. "Grab up Dorrance, man! We're getting out of here."

"But—but he's dead," objected Quincy. "And all that weight—"

"He's not dead," I said without explanation. "And you can carry as much as your own weight as a pinch load. Help him, Diana. Snap out of it, you two! I'll cover our retreat."

My tone brooked no further objections, and the pair of them bent to hoist the space-suited body of the scientist between them. There was a telephone line, of course, from the mine cavern to the *Icarus*. I wasted a precious moment plugging in the terminals of my radio phone and calling Powell. It seemed a year before he answered.

I knew that the geologist held our fates in the hollow of his hand, and I hated to let him know it. I wasn't even sure yet whether

or not he had been in with Parneau, alias Heidendorf, but I had to take that chance.

"Hello, the mine!" came his dour voice. "What's up?"

"Powell! Armitage speaking. Trouble. Open the outer lock and see that hoist is at the bottom of the shaft. Start your gravity nullifying field and be ready for immediate takeoff. Be ready to operate that lift in a hurry." I hesitated for the briefest instant, then plunged on. I *had* to play fair with the man.

"And, Powell, if a dragon's head starts out of the hole instead of us, don't wait. Take off—and keep going!"

I broke the connection before he could ask questions, and sprinted for the exit shaft. A movement of the headless body of the dead borer caught my eye. It was being shoved like a log of wood out into the cavern. I knew what that meant.

"Get going!" I ordered Diana and Quincy. "Don't stop for anything until you reach that hoist, and if you know any prayers you'd better say 'em. If some of these things get around and head us off, we're done. Run!"

"But you, Jack?" cried Diana anxiously. "I won't leave you. If—if you're going to die, too, I'll stay with you."

That should have told me plenty, but I didn't even have time to think.

"I'll be right behind you," I ripped out. "Get!"

I GAVE her a little push. She stopped and gathered up Dorrance's feet. With Quincy shouldering the greater part of the inert scientist's weight, the pair of them disappeared up the corridor toward the surface. I backed into the mouth of the tunnel and waited as long as I dared, watching the tableau in the cavern.

The serpentine body of the headless borer, rigid now as a steel beam, was shoved aside at last. Out of the mouth of the cleared tunnel undulated, not one, but dozens of the red-eyed monstrosities. I waited until the foremost crossed as far as the idling radium engine and twisted its mobile head from side to side until it caught sight of me. It took more nerve to stand there and wait for that instant than anything I had ever done in my life before.

As the borer lunged toward me, I turned and fled. I carried with me the vague impression that a pair of the fire-breathers had drawn apart from the pursuit and were examining the radium engine with intelligent curiosity. I ran along the inclined passage until I could see Diana's torchlight, reflecting along the glazed walls of the tunnel before me. Here I turned.

Filling the tunnel to within a couple of feet of its circumference and approaching me with a stiff, sliding motion that was as grotesque as it was horrible, its eyes glowing like twin headlights of infra-red, came the foremost borer. I didn't dare wait until it got too close. I remembered the fate of Tom Joyce and Etienne Parneau. I fled carefully. I had to husband my shots now. This made three. The magazine only held ten, and I knew I couldn't reload with those clumsy space gloves on my hands.

The concussion in that confined space would have been deafening if I could have but heard it. As it was, I saw the red flare of the explosion and felt the recoil. The borer shot out a tongue of flame at me just as the bullet struck, and it didn't fall short more than ten feet. I was cutting things too fine.

Then the borer's head disintegrated, and I turned and ran on. But my hope that this would plug the tunnel and halt pursuit was doomed to disappointment. It slowed the borers, but that was all. They just pushed the dead thing ahead of them until they reached the first branching passage and side-tracked it to clear the way again. It wasn't ten minutes before a new borer was speeding up the tunnel after us.

I knew the things had an uncanny knowledge that I could only kill a limited number of them. And I was laboring under the constant fear that some of them had taken to the branching passages and were speeding ahead to get to the surface and start back down our tunnel. I shuddered to think of what would happen to the *Icarus* if this happened, and Powell failed to get away. But I toiled on.

At intervals of about a mile I had to stop and kill the foremost borer. It was like a terrible dream from which there was no escape. Run, stop and kill, then run some more. If I couldn't stretch that distance between shots I didn't know what I was going to do about the last three miles. The only consolation was that Diana and Quincy managed somehow to stay ahead of me.

And then, with the ninth shot, I took a desperate chance. We must have been within a couple of miles of the end of the tunnel, but we might just as well have been a couple of thousand. I was badly winded and was using up my nearly exhausted tank of oxygen at an alarming rate when I fired that ninth shot, not at the borer, but at the roof of the tunnel above its ugly head.

AND then, just as I despairingly steadied my gun to fire the last bullet, victory was snatched from defeat. The experimental shot had gone into the ceiling of the tunnel, just above that ghastly-eyed head. The borer was coming on without a pause, when it stopped with an abruptness that was startling. I couldn't see back along its whipping tubular body, but I could feel.

The bullet had exploded somewhere in the rocks above the tunnel, acting like a small dynamite charge, and the entire structure collapsed the tunnel with a grinding shudder that nearly threw me off my feet. Such a simple thing as that. I had successfully blocked the tunnel, not with a dead borer, but by a minor Moon-quake. I triggered my last bullet into the roof of the corridor just above the trapped borer's head, burying the thing under a mass of crumbling rock and debris. It had worked! I think I was laughing like a lunatic as I ran after Diana and Quincy.

Martin Powell had not failed us. The cage was down, and my companions were awaiting me. Quincy spent as the magazine of my automatic, found the strength to signal the geologist to haul away. There was still

need for haste, but the desperate urgency was past.

At the surface, while the pair of them carried the body of Dr. Dorrance into the air-lock, I took the time to remove another article from my capacious belt pocket, a cloth bundle that I had found in the chart-locker of the ship. Using my drill and pick and a couple of other tools I didn't figure the space suit would need as equipment any more, I solemnly spread out the article on the lavalike rock that was the soil of Tycho's Crater. Then I gravely faced toward the sun and gave the naval salute.

This done, I scurried into the air-lock, which had reopened for me. Inside the vessel, I removed my helmet first of all.

"Explanations later," I told Powell. "Get to the control room at once and take the ship up five hundred feet. Lock the controls at that position and come back to give us a hand."

The geologist didn't wait to ask questions. He obeyed as promptly as any soldier or sailor I had ever known. I proceeded to get out of the now unbearably heavy space suit. Quincy and Diana did the same. We got the figure of Dr. Dorrance out of his suit and I carried him upstairs.

In a few moments, the four of us survivors were gathered around Dorrance, and Powell was treating his head and face for radium burns. Slowly the color came back to the scientist's lips, and he showed signs of revival.

"Oh, he lives! He lives!" cried Diana, beginning to cry.

"How did you know he wasn't dead?" Quincy demanded of me.

"If you would ever use your head, you'd have guessed it," I told him shortly. "The lead in his suit and helmet was partial protection against the radon ray. Parneau forgot about that in his excitement. I was figuring on rushing him myself when Dorrance tried it."

"Where is Parneau?" demanded Powell in his sad voice. "Where's Joyce?"

Now was as good a time for the show-down as any. I didn't feel up to it, but I had to clean up things before I lost control.

"Dead," I said grimly. "One question before I explain things to you, Powell."

DREW my special automatic, which I had not left in my space suit, and shoved it against his breast. It was empty, but he didn't know that.

"Were you in the pay of the Heidendorff Ring?" I asked.

To give the dour geologist credit, he didn't blink an eye.

"I know you figure you owe me something on account, Armitage," he said evenly. "Maybe you do, but I swear I don't know what you're talking about. Why don't you tell me what the hell's happened?"

"I believe you," I said. And then I told them all what the Heidendorff Ring had been. "As for what just happened down below Tycho, you tell it, Quincy."

The millionaire sportsman was a good sport. Like a little man he spoke his piece, taking the blame that was rightly his with-

out equivocation. Diana was sobbing gently when he finished. It was at this point that Dr. Dorrance completely recovered his senses. Powell went on ministering to him as he began to talk.

"I won't know for some time," he said weakly, "whether my brain has been injured by that raying. But whether it is or not, whether I live or not, I—I want my work to go on. I—I want the entire world to profit by any little thing I may have done. Diana, I've known about you and—George Quincy for some time. I think it is best that way. I cannot hold you to your promise to me. I knew you didn't really love me."

"Alfred! Alfred!" cried the girl brokenly. "Don't talk like that. You must live. You have to get well. And I don't love George Quincy. I—I don't love anybody but you."

"So you had to talk, Armitage," said Quincy bitterly. "Well, I've got it coming to me."

"Armitage?" murmured Dorrance in surprise. "It was Tom who saw how things were, and—"

"Tom was wrong!" cried Diana. "At least about—about George. Poor Tom!" And she suddenly put her head against my shoulder and began to cry afresh.

"Oh," said Dorrance, meeting my astonished eyes. "So you are a Government man, Jack Armitage. A sort of G-man of space, eh? Well, perhaps it is better this way, after all. You seem to have taken command of about everything."

"There's one thing left, sir," I said respectfully. "Come to the observation room, all of you. I've something to show you. Feel able to walk a few steps, Doctor?"

He must have recalled his own words to me some two weeks before.

"Lead the way," he said, taking Powell's arm to steady himself.

Wonderingly they all trooped after me. I lined them up at the curving window and pointed down five hundred feet at the spot we had recently left. There, spread out flat, was a rectangle of red and white and blue.

"Why—why, that's an American flag!" murmured Dorrance, and the others turned questioning faces to me.

I drew myself erect in the naval fashion, saluted, and spoke in a reverent voice.

"In the name of the United States of America, Earth, with you people as witness to my act, I hereby take possession of the Moon and have so planted the flag of my country. With the help of God, I pledge that all benefits and riches which may accrue from this new territory shall be shared by all of mankind."

Everybody's eyes were glistening like my own as I fell silent. Then:

"Amen to that," said Martin Powell grimly.

They all echoed his words, and there was a contented smile on the strained face of Dr. Dorrance.

IT was considerably later in the control room, where I was waiting to set the homeward course, according to the figures Powell was working out with the aid of the weakened Dorrance. Quincy came in with Powell. We set the course which would head

us for a rendezvous with the huge and lovable old greenish gray ball that swung far above us in space. As the steady, muted roar of the rockets broke into a smooth chorus, Quincy touched me on the shoulder.

"Diana wants to see you," he said. "Powell and I will stay here. She's in the observation room."

I found her there, staring wistfully back at the Moon we were leaving.

"Poor Tom," she whispered softly.

"He died like a man, Diana," I said. "And now I think George Quincy's going to live like one."

We were silent for a few moments.

"You're a strange, strange man, Jack Armitage," Diana said at length. "You play the role of a mechanic, a diver, a naval officer, and then a secret service man with equal ease. And at the end you cap it by turning out to be a humanitarian and a patriot. Are there any other roles you can play?"

I looked deeply into her violet eyes, and what I saw there encouraged me.

"Well," I said gravely, "I've never played the role of a husband. I think I'd like to try that."



HEADLINERS IN THE NEXT ISSUE

NEXT month—Gerry Carlyle vs. Anthony Quade, in the most fascinating fantasy feud of the entire System. Arthur K. Barnes has sharpened the claws of the beautiful "Bring-'Em-Back-Alive" huntress, and Henry Kuttner has loaded the cameras of Nine Planets Films' ace photographer. Result, an interplanetary duel of wits, with the rarest monsters in the Universe as the prize.

It's doublecrossing and double-exposure between the two most glamorous characters in scientification when Messrs. Barnes and Kuttner hurl you on the tail of a comet, then twist it, in their thrilling collaboration, **THE SEVEN SLEEPERS**. Watch the movie-makers of tomorrow blast off from Hollywood-on-the-Moon in quest of the greatest scoop known to civilization. **THE SEVEN SLEEPERS**, by Arthur K. Barnes and Henry Kuttner, is a complete book-length novel featured in the special scientification novel section of the May **THRILLING WONDER STORIES**—with illustrations by Schomburg!

* * * * *

FOUR men alone on Ganymede, airless, savage, uninhabited moon of Jupiter. And one of these four men had just made the greatest scientific discovery in history.

And in so doing, he had unknowingly doomed himself to the strangest fate that ever befell a human being!

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"I've done it," he whispered hoarsely to himself. "I've done it at last—"

Read about the most amazing invention known to humanity in Edmond Hamilton's newest novel, **DICTATORS OF CREATION**, also featured in our next issue! It's a story of a stolen scientific secret and of vengeance across the years and the void.

* * * * *

NELSON S. BOND, popular author of scientification, makes his debut in the pages of **THRILLING WONDER STORIES** next month with a novelet of a penal colony on Uranus, **PRISONER'S BASE**. It's a gripping story of human emotions conquering the icy bells of a frozen world.

* * * * *

MEET Mr. Babbit of the future! You'll find him in Don Tracy's streamlined story of a modern Utopia, **TOMORROW'S HERO**, also published in the May issue of **T.W.S.** It's a delightful story which proves that the present may sometimes be better than the future!

* * * * *

OTHER fine stories by favorite fantasy authors in the May issue of **THRILLING WONDER STORIES**. And look forward to our regular parade of exclusive features. IF, SCIENTIFACTS, SCIENCE QUIZ, SCIENCE QUESTIONS AND ANSWERS, THE STORY BEHIND THE STORY, LOOKING FORWARD, and many others. And remember—there's a long complete scientification novel in every issue of **THRILLING WONDER STORIES**!



A FEW hundred years ago a comet appeared in the sky, and Europe was stricken with panic. The doctrine of Galileo had not yet thrown the revealing light of science on the mysteries of the sky, and, to most men, the approach of a comet signaled some terrible disaster threatening the world.

Similar portents down through history, have left a trail of fear and legends in their wake.

That comet appeared centuries ago. But during the present century the entire population of a tropical island was killed, inexplicably and strangely.

Traders, when they landed, found every native dead, without any trace to show what caused the massacre. Poisonous gas belched from a crevasse in the earth? The island wasn't volcanic. Freak lightning? Unlikely enough. What killed those men?

What happened to Peter Rugg, the Missing Man, who vanished without trace and without leaving footprints in the snow of a courtyard before an inn? What happened to the vanished warship *Cyclops*? What became of the crew and officers of the *Marie Celeste*? What caused the curious plague that affected a French village only a few years ago?

Some gas that couldn't be analyzed was killing men by scores—so the theory went.

There were theories about the great comet, too. One of them contended that Satan was riding back to the earth. But not one mentioned anything about a gaseous body, with its coma, core and tail, following a logical orbit into the Solar System and out again.

Nobody, at that time, had the necessary scientific data to enable him to arrive at the correct solution to the problem.

We could easily convince a man of 1840 that we were supernatural beings by simple scientific demonstrations. Chemical magic is familiar to every slight-of-hand artist. We can produce a vibration that can be felt, not heard, and which almost caused a panic during the dress rehearsal of a Broadway stage-play, when it was used as an experiment.

We can, with the right apparatus, project voices from empty air. And we can float solid metals in air, with the aid of electro-magnetism.

Such scientific experiments, to a man of 1840, would be inexplicable. It would be difficult to convince the poor chap that he wasn't crazy. He would be utterly at a loss to explain the mysteries of 1940 science, just as Europe was unable to realize the true significance of a comet a few centuries ago.

We have mysteries today, which cannot, in the light of present-day science, be logically explained. But will those enigmas always remain hidden? Probably not; science progresses, and the very existence of baffling phenomena indicates that there is still a great deal to learn. Mankind has not yet exhausted the secrets of this Universe, or even of this planet.

The basic mystery of all—the origin and nature of life itself—is still unsolved. Artificially-created life is possible today, and this is only the beginning. What will be the ultimate outcome? Living robots? Perfect bodies to hold our transplanted brains? Immortality?

One thing is certain: mysteries of

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today will be solved in the future. And there are mysteries all around us. It is difficult to dismiss science-fiction too casually when one remembers that events no less fantastic *are occurring today!* The natural laws that govern these phenomena may be the practical science of the future!

CONTEST NEWS

ATENTION, treasure-hunters! As this issue of T.W.S. goes to press, the judges are busy tabulating the results for the Scientific Treasure Hunt Contest announced in the February issue.

This contest, the first of its kind ever presented in any science fiction magazine, seems to have gone over very successfully, judging from the hundreds of entries received. Many thanks to the numerous readers who participated. Others will be glad to learn that a new contest will shortly be announced.

Look for a full list of the prize-winners in the Scientific Treasure Hunt in next month's issue!

STARTLING STORIES

THE May issue of **STARTLING STORIES** presents the first time-traveling novel ever to appear in that magazine! By far the most fascinating theme in science-fiction, Manly Wade Wellman has used it for the basis of his greatest story—**TWICE IN TIME**. This novel is profusely illustrated by Virgil Finlay.

Stanley G. Weinbaum's distinctive story, **VALLEY OF DREAMS**, is the masterpiece selected for the **HALL OF FAME** in this number. Other star stories, and special features in the May **STARTLING STORIES**. All in all, it's required reading!

CAPTAIN FUTURE

THE second great issue of our newest companion sciencefiction magazine, **CAPTAIN FUTURE**, will shortly appear on all newsstands. This number features Edmond Hamilton's interplanetary classic, **CALLING CAPTAIN FUTURE**, and once again introduces the Wizard of Science and his band of Futuramen—Otho, the synthetic android; Grag, the thinking robot, and Simon Wright, the living brain.

There's a brand new special illustrated feature in the second issue of **CAPTAIN FUTURE**—"The Worlds of Tomorrow." Here you will find the complete history of the exploration of the planet Pluto, accompanied with maps of its cities, mountains and three moons. Short stories, and a **HALL OF FAME** selection, **THE HUMAN TERMITES**, by Dr. David H. Keller, also in this number! All those who haven't already made the acquaintance of this great magazine had better do so now!

AMATEUR STORY CONTEST

THRILLING WONDER STORIES still continues its national hunt for new stories by new authors. It is the only science-fiction magazine publishing stories by its own readers! We believe that every reader has an entertaining story to tell—and we'd like to see it. Six amateur writers have rung the bell so far—why not you?

Write up that pet interplanetary or time-traveling idea you've been hoarding to yourself all these years. Type it up, double-spaced, and send it to **AMATEUR WRITER'S EDITOR, THRILLING WONDER STORIES**, 22 W. 48th St., New York City, N. Y. Enclose a stamped, self-addressed envelope for the return of your manuscript, if it proves to be unavailable.

If your story is a fairly good one, we will be glad to publish it in T.W.S. Prize stories are purchased at the same rates paid to our regular staff writers. We want to present a brand new writer in every issue, if possible. Why not try for the honor?

APPLICATION FOR MEMBERSHIP SCIENCE FICTION LEAGUE

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I wish to apply for membership in the **SCIENCE FICTION LEAGUE**. I pledge myself to abide by all rules and regulations.

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JOIN THE LEAGUE

HAVE you joined the SCIENCE FICTION LEAGUE yet? It's an international organization composed of the world's most enthusiastic followers of science fiction—and it fosters that intangible bond between all science fiction readers. Just fill out the application blank provided on page 116.

To obtain a FREE certificate of membership, tear off the namestrip of the cover of



this magazine, so that the date and title of the magazine show, and send it to SCIENCE FICTION LEAGUE, 22 W. 48th St., New York City, enclosing a stamped, self-addressed envelope.

And readers—write the editor of THRILLING WONDER STORIES a regular monthly letter. Tell us the type of stories you want, the features you like, the contests you would like to see. Your suggestions and criticisms are helping T.W.S. maintain its rank as the leader in the science-fiction field.—THE EDITOR.

NEW SCIENCE FICTION LEAGUE MEMBERS UNITED STATES

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phasis on the mental, rather than the physical possibilities of early man is a novel treatment. A logical and entertaining tale.

"Song at Twilight" is a fine story in a lighter vein. The Abbott Family seem destined to be the worthy successors of Campbell's Penton and Blake.

"Revolt Against Life" is good, although a little on the sensational side, and at times, somewhat incoherent. The idea of universal immortality, with its attendant evils, is old, but selling it on the installment plan, each payment being good for ten months, is new.

"Conquistadores From Beyond" is worthy of special mention as a contest story. The misunderstandings of the widely different races are well handled. The ending is good.

"Waters of Death" would ordinarily rate about third. That shows how good the whole number is. I like T. W. S. short shorts.

On a strange impulse, I tried the Science Quiz this month. Results: 1. I still prefer to have the space used for a story. 2. A score of 46, which, as per your ingenious system makes me a Human Encyclopedia. 3. I disagree with you on the answer to No. 12 in the true or false test. There are three possibilities: (a) You may say that neither receives any heat, but only electro-magnetic vibrations which become heat by absorption. (If you had meant this, I am sure you would have so stated in the answer column) or (b) they receive the same amount of heat per unit area; but in the absence of any indication to the contrary, total amount is necessarily called for; consequently (c), the Earth receives about 16 times as much heat as the moon, so the statement is true as given in the test. Q. E. D.—3136 Q Street, Lincoln, Nebr.

BINDER NOVEL GREAT

By J. J. Fortier

Congratulations! We have an unofficial SFL chapter in our neighborhood which takes a vote on the best liked novel, short story, article, etc., of the month. In the December batch, your mag places FIRST in the novel group! And in the novelet group, too! 14 out of 15 voted "The Three Eternals" by Eando Binder as best Novel of December in any science fiction magazine. 9 out of 15 voted "Signboard of Space" by Frederic Arnold Kummer, Jr., as best novelet.

Ours is a well informed group, I guess. Either that, or we're plain lucky. Anyway, we averaged 57.5 on the SCIENCE QUIZ.

The other stories rated as follows:

"Suicide Squad," Henry Kuttner—very good. "The Einstein Slugger," Manly Wade Wellman—also very good. "World's Pharoah," Kevin Kent—clever, plain good. "Coup D'Etat," Oscar J. Friend—fair. "Shadow World," Ray Cummings—above average, nice idea. "No Help Wanted," Alfred Bester—fair.

The departments were well up to par.

Your covers are improving, but why not put Finlay to work illustrating your front door? I have seen some of his work and it is really good.

On to a better fan world! On to a greater January issue! You and me both!—1836—39th Avenue, Oakland, Calif.

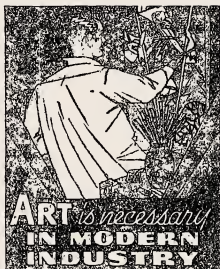
THE RIGHT BALANCE

By Dan E. Anderson

I just can't keep still any longer. You're publishing so many excellent stories that I've got to thank you for it. When the old WONDER STORIES fell into your hands, I must admit that at first the stories you put between the covers of THRILLING WONDER STORIES bore little resemblance to the old Wonder. Too much stress on sensationalism and fast-action. But now you've hit on the right balance between that extreme and the rather dry, over-scientific (to coin a new word) WONDER of the early thirties.

Take the January and February issues for instance. There were only three stories below par: "Conquistadores From Beyond," "The

(Continued on Page 120)



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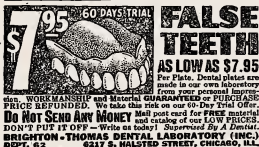
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(Continued from Page 119)
Great God Avrio" and "Waters of Death." Every other story was top-notch science fiction.

I think first place in the January number should go to Gordon A. Giles' superlative short, "Via Pyramid." This Giles can pack a real emotional punch in a few well-chosen words. I'd give second and third places to Wellman's "Day of the Conquerors" and Arthur's "Song at Twilight," that inimitable saga of the Abbott family. By the way, Wesso's illustrations for this yarn were pretty bad. Too hard to tell one Abbott from another.

In February, I'd give first position to Tremaine's gripping yarn of the robot with a big heart, "True Confession." Second and third to "Day of the Titans" (with an excellent illustration by Paul) and "Doom Over Venus."

And I think it wouldn't be out of place at this time to give special credit to a writer who takes real pain with his work, a writer who has shown remarkable improvement over some of his previous work, a writer who has turned out three exceptional novels in "The Three Planeteers," "Captain Future and the Space Emperor," and "Doom Over Venus." I am referring, of course, to Edmond Hamilton. May his pen never run dry!

Regarding your illustrators, I believe Schomburg, Finlay, Paul and Wesso are far ahead of the rest. Schomburg's work on "The Lightning Men," and Finlay's work on "The Three Planeteers" in STARTLING and "Day of the Conquerors" in T. W. S. deserve special mention.

So I want to take this opportunity to thank you for many happy and entertaining hours spent with a copy of good old T. W. S. clutched in my hands. And may there be many more hours and many more journeys through space to far-off planets to come, with T. W. S. and STARTLING STORIES and CAPTAIN FUTURE.

A COMPLIMENT—AND A WARNING

(Unsigned)

Though this is my first letter to you since Wonder Stories changed hands something like three years ago, I think I can rate myself one of the old-timers with respect to reading-science fiction. I have watched T.W.S. grow very definitely in quality, and now in quantity (monthly instead of bi-monthly). This letter concerns one more or less neglected aspect of science fiction—humor—in which T.W.S. is definitely among the leaders. I am offering you a compliment and a warning.

Humor has a long and honorable background in science fiction, of course, dating back to Baron Munchausen" and Hicks' inventions with a kick. Although, for several years during the science fiction depression, we saw little of that type of writing.

T.W.S. is upholding the traditions of humor nobly, I think. You are giving us both kinds of the subtle, intellectual type as typified by Arthur K. Barnes and Henry Kuttner and Stanton Coblenz, and the broad, slapstick type as typified by the amazing Pete Manx. The latter also upholds T.W.S.'s policy of introducing new ideas whenever possible, for Pete Manx's hilarious adventures in time (and I'm sure hoping for more) are definitely striking a new note.

But here's the warning. The general idea of publishers nowadays seems to be that if one guy gets something good, everyone jumps in and works it to death. Witness the plethora of stf mags on the news-stands today. So don't let the success of the humorous story run wild. Remember—humor is a spice. It should bear the same relation to the contents of a magazine as it bears in relation to a single story by Mr. Barnes or Mr. Kuttner, for instance. They use it just to enliven the story, never letting it interfere with the dra-

BEST FUN, FICTION AND FOTOS IN

matic action. Just so should Pete Manx' adventures be used: just once in a while for seasoning. Please don't let your other writers ruin a good thing by trying to be funny.

Kuttner and Kent and Barnes and Coblenz and Ed. Hamilton are good at that sort of thing. Gerry Carlyle and Pete Manx can keep coming and we'll still like them. (Not that Gerry Carlyle is essentially a humorous character; I was referring to Mr. Barnes' breezy style when writing about her). But don't spoil our enjoyment of an occasional farce by running it into the ground.

But maybe you know your job better than I do. Maybe you already know how best to cultivate the possibilities of your humorous writers. You seem to have done a pretty good job of editing so far, so maybe my unasked advice is superfluous. . . By the way, since Manx seems to be working into a regular series, how about asking Mr. Kent to send his hero back to the days of Hercules, etc.? He would have a grand time telling the Greek gods where to get off, or doping the Trojan horse for the Helen Handicap, or using jiu jitsu on Hercules himself.

Well, thanks for listening. And thanks for a lot of swell reading.

ANSWERS TO SCIENCE QUIZ ON PAGES 30-31

POSITIVE AND NEGATIVE

1. True.
2. True.
3. True.
4. False.
5. True.
6. False. Theoretically, this is true, but actually, this is not always possible.
7. False. They are in inverse proportion to their atomic weights.
8. True.
9. True.
10. False.
11. True.
12. True.
13. True.
14. True.
15. True.
16. False. It will apply so long as the current is constant.
17. True.
18. True.
19. True.
20. True.

TAKE A LETTER

1. d
2. b
3. a
4. b
5. c
6. a
7. c
8. d
9. c
10. b

TO THE COLORS

12, 13, 8, 10, 1, 11, 14, 6, 5, 4, 2, 3, 9, 15, 7.

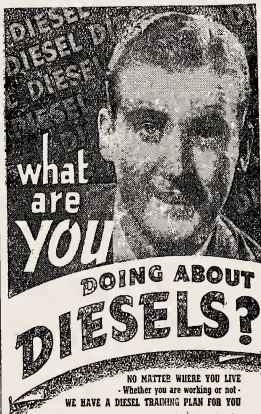
SCIENCE IN BLOOM

1. leaf; 2. root; 3. pollen; 4. pistil; 5. stamen; 6. flower; 7. phloem; 8. stomata; 9. cambium; 10. rhizome; 11. cotyledon; 12. mesophyll; 13. monocotyledon; 14. perenchyma; 15. germination.

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TAKE your Jules Verne down from the shelf one of these days and reread "From the Earth to the Moon." It's over 275 pages long—all devoted to a simple account of man's first flight to the moon. Verne doesn't catapult you from one galaxy to the next with the speed of light. Verne fails to have his heroes resort to an arsenal of Z-rays and death rays. He merely takes you to the moon. He doesn't even land you on its surface. But you like it—a lot!

Why? The answer is as simple as Verne's narrative. Jules Verne deftly made the reader appreciate the tremendous problems to be encountered in attaining space flight, ranging from overcoming the shackles of Earth's gravity to the dodging of perilous meteors.

Every mile in space as achieved by Verne's craft is a conquest for man and a tribute to the ingenuity of his race. The loneliness of the void, the infinity of cold space, the romance of the planets, all are driven home with dramatic force in Verne's writings.

Yes, the old guy was a master. We wish he were still alive; he'd be hard to beat!

FIRST FLIGHT TO THE MOON

Oscar J. Friend has been supplying us with some fine science fiction stories lately, and we thought it about time for him to show us what he could do with a feature novel. ROAR OF THE ROCKET, in this issue, is the result. As you'll notice from reading his letter, Friend is a disciple of Jules Verne, and his novel of man's first flight to the moon recaptures for you the pioneering spirit of adventure, the thrills and drama of man's challenge to the void. Friend's letter follows:

Your request for the story behind the story of "Roar of the Rocket" catches me rather flat-footed and off guard. I feel somewhat like the small boy caught at the cookie jar by Grandma. For the actual truth of the matter is that the yarn was inspired by one of your own covers I saw recently. I got to day-dreaming over the possibilities of fire-eating dragons actually living today, where and how they might live, and how man could safely face them.

One thing led to another until I had the concrete outline, or should I say skeleton, of the Moon-worm story. All that remained was to write it. I can only hope that the readers of THRILLING WONDER STORIES like it

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and take it to their hearts.

Do you remember a year ago, more or less, the little chat we had about the science fiction of today? I told you that I didn't care much for it because it seemed to have lost the appeal that the works of Jules Verne and the early stories of H. G. Wells had—human interest was lacking, sacrificed to the gods of scientific gadgets and wild conceptions.

You became quite enthusiastic and replied that the human interest touch was exactly what you were looking for in the science fiction stories which pour in across your desk. Knowing that I was a writer of Western fiction, because my characters lived and moved and had human substance, you talked me into trying my hand at science fiction. The result was "Of Jovian Build," published in your October, 1933, issue.

Since then there have been perhaps half a dozen shorts in the same vein, and I take this opportunity of thanking you and the readers gratefully for the warmth with which they have been received. And now, "Roar of the Rocket" is my first long science attempt. You ask me for the genesis of this story, and I have given you only the most meager answer. But I've tried to explain that it really goes back to the very first science yarn I ever attempted. In cold black type I can't describe things properly. But in all my science yarns I try to keep my feet on the ground without getting too wild, striving to give my stories and characters at least an aura of plausibility if not of fact.

In the present instance, if only one reader identifies himself with the hero of "Roar of the Rocket" and has the actual thrill of space sickness at sight of the green globe of Earth spinning away from him in the void, if he has his heart in his throat as he flees up the sub-lunar caverns to escape annihilation by the radioactive borers—I will be amply repaid. For I wasn't writing just for a check or with my tongue in my cheek. As I wrote "Roar of the Rocket" I was Jack Armitage, and I suffered and thrilled and feared heart-beat to heart-beat with him.

It is impossible to please everybody, of course—at the same time, at least. But if sufficient readers of THRILLING WONDER STORIES like "Roar of the Rocket"—well, we'll go space-roving together again one of these days.

CONTRACTING UNIVERSE

That the Universe is expanding is a well accepted theory, and one that has fathered a good many scientific stories. But no one has ever considered the probability of a contracting Universe, and its ensuing dangers to the Solar System. That is, no one has ever thought of it but Robert Moore Williams, who saw in that possibility the nucleus for a first-rate science fiction story, THE TIDES OF TIME.

So here he is, to tell how he expanded one small idea into an exciting novel:

The origin of "The Tides of Time" is so obvious as to need no explanation. When I was a small boy, I was frequently told that everything that goes up must come down. If I threw a rock straight up, I had better get ready to do some dodging, for it was due to come down pretty quick and likely as not it would clip me on the bean when it did it.

In more recent years, continuing my exploration of the mysteries of the world in which I find myself, I have learned that the Universe is expanding. In a sense, it is going up. The question immediately posed itself: When is it coming down?

Hence, "The Tides of Time." I enjoyed writing this yarn. And the part of it that I enjoyed most was the scene where

(Continued on page 124)

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(Continued from page 123)

the five co-ordinators, and the alien being from a world lost across the void of space, finding themselves in a doomed system, gravely thumbed their noses at the Universe which was kicking them off its doorstep. Barring none, I never wrote a scene that I enjoyed more. I don't know what your reaction will be, but to me that nose-thumbing gesture was typically—and grandly—human!

THE LOST CONTINENT

Stories of Atlantis are by no means new, but in **CONQUEST BY FIRE** Ward Hawkins delivers some brand-new sidelights on that fabulous continent. Ward Hawkins, by this way, is a contributor to several of our companion magazines. Many of you have probably read his recent mystery serial, which ran in *Collier's*. It was pretty good. Which is by way of hinting that you're in for a treat when you browse through **CONQUEST BY FIRE**. Here's what the author has to say regarding the story's genesis:

I've always been a lover of tales. Any kind of tales, just so they're tall—and the taller the better. Perhaps that's why I cut my literary teeth on magazines like T.W.S., and let the five-foot-shelf gather the dust of a decade.

And it's my contention that we present-day writers have to hustle to spin them taller than the old-timers, the ones who gave us our legends. Witness: The Graveyard of Ships, The Flying Dutchman, The Lost Continent of Atlantis.

The one about Atlantis strikes me as being the biggest whopper of them all. And I don't mean because it was supposed to have been an advanced civilization way back when the rest of the world slept in caves. Nor because it suddenly sank beneath the waves. It was because, if you'll remember, Atlantis was supposed to have been a kind of a Utopia.

The Atlantees, so the legend has it, got along with each other and everyone else just fine. They never got a yen for the other fellow's wife, or his property or his money. And somehow—this is the pipe-dream-part—somehow they got along without mass murder.

Oh, I know you're laughing—you fellows who can take interplanetary or even inter-galaxy travel without a chuckle. You're probably in stitches.

"Get along without mass-murder?" you roar, wiping tears of laughter from your eyes. "That's good! That's really a tall one. Why our best minds know that it's utterly beyond imagination! Every now and then we've got to go next door and blow our neighbor into very small pieces. . . . No war! Boy, that's rich."

You'll probably laugh my yarn right out of the book. And, looking around, I don't know as I blame you.

DINOSAURS TODAY!

We've had strange heroes in some of our tales. Venusians. Martians. Even robots. But in his short story, "Beauty and the Beast," Henry Kuttner presents the oddest hero of them all—a dinosaur. A giant, armor-skinned dinosaur who will captivate your heart from the onset.

Incidentally, casual inspection of this month's cover illustration may induce you to suspect that Artist Brown is depicting an anachronistic scene, what with showing

a dinosaur in modern times imperiling the nation's Capitol. But there's a surprise in store for you. Mr. Kuttner goes to Washington, so tune in:

A friend of mine, Dr. W. C. Karin, is an ardent horticulturist, and more than once I've spent a pleasant hour in his greenhouse near Pasadena. Just recently I had an experience there which gave me the plot-germ for "Beauty and the Beast." Examining a particularly lovely blossom, I had reached out to stroke the velvety texture of the petals when the doctor hastily warned me back.

"Better not touch it," he said. "It's not really dangerous, of course, but the sap has a toxic effect. It irritates the skin painfully."

As it happens, I don't recall the name of the plant, nor, actually, whether it was the sap, or the pollen, or something else that possessed toxic properties. Dr. Karin gave me a lecture on the species, which I've managed to forget completely, but I do recall that as we left the greenhouse, my friend pointed to a toad squatting motionless on the ground and remarked, "He isn't as pretty as your flower, but he's a great deal more useful."

The idea—the contrast of the toad with the gorgeous blossom—stuck in my mind, and the inevitable parallel occurred to me, Beauty and the Beast. Somehow the human race has always associated ugliness with evil, and beauty with good. That was one of the reasons why senile, hideous hags were burned for witchcraft in the not-so-good old days.

Now in a certain California museum there's a restoration of a dinosaur, and for some reason I've always felt a sneaking liking for the fellow. He's ugly as sin, but he's a brontosaurus, and they never had much of a chance with the ferocious carnivores of prehistoric times. I began to wonder what might be the experiences of an intelligent dinosaur set down in modern civilization. Does man value superficial beauty above intrinsic worth?

In actuality, I don't know, and I trust no dinosaurs will make their appearance in my own vicinity. But fictionally I have tried to work out the idea, and I trust readers of T.W.S. may get some enjoyment from the tale.

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SCIENTIBOOK REVIEW

THE OUTSIDER AND OTHERS, by H. P. Lovecraft. Edited by August W. Derleth and Donald Wandrei. Published by Arkham House, Sauk City, Wis. 553 pages. Price \$5.00.

EVER since the death of H. P. Lovecraft in 1937, both fantasy and science fans the world over have been waiting for a collection of his stories to appear—and now at last such a collection is out! More than a score of Lovecraft's masterpieces have been selected for publication in this anthology, and the 553-page volume, entitled **THE OUTSIDER AND OTHERS**, marks a milestone in fantasy literature, equal almost in importance to the collected tales of Edgar Allan Poe.

Such classic weird and fantasy yarns as *The Colour Out of Space*, *Pickman's Model*, *The Outsider*, *The Nameless City*, *The Shadow Out of Time*, and dozens of others are represented in this magnificent tribute to the brilliance of H. P. Lovecraft. In addition to these stories, most of which are so well-known that no comment is needed, the editors, August Derleth and Donald Wandrei, have included Lovecraft's analytical essay, *Supernatural Horror in Literature*, and have themselves included a prefatory note which contains biographical data about Lovecraft.

The distinctive jacket of the book has been drawn by Virgil Finlay, one of Lovecraft's greatest admirers. Editors Derleth and Wandrei, both popular fantasy writers in their own right, deserve a big hand for the perfect job they have done in achieving the publication of this giant Lovecraft omnibus.

THE OUTSIDER AND OTHERS is an absolute "must" for all fantasy readers and followers of the late Lovecraft. Only a limited edition has been printed, and the supply is going fast. Fans desiring a copy had better waste no time in ordering it for their shelves.

The complete volume packs enough material to fill five books of average length, and is not to be missed!

—ELDON HEATH.

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SCIENCE QUESTIONS AND ANSWERS

(Concluded from page 77)

the geographical north pole) of the Earth is the same as that of the Earth's south magnetic pole. To speak with greater accuracy, one calls the "N" end of the compass needle the "north-seeking pole."

Some years ago an expedition to look for the East and West Poles was suggested (not too seriously). Perhaps we should find them together, on the Equator at 180 degrees longitude.—Ed.

STELLAR HEAT

How can astronomers measure the heat of a star by observing its light?—L. B. Hackensack, N. J.

The light from a star reveals the type of matter on its surface, as well as its condition, temperature and density. The color of a star depends upon its heat, thus allowing astronomers to grade a convenient scale.

If the color is bluish-white the temperature will be in the proximity of 15,000° C., if white 8,000° to 11,000° C., yellow 5,000° to 6,000° C., orange 4,000° C. and red 2,000° to 3,000° C.

The giant stars Betelgeuse and Antares are therefore relatively cool; Arcturus being orange is hotter, whilst our yellow sun is hotter still. Rigel is bluish-white and one of the hottest stars known.—Ed.

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Amateur writers and printers. Join the American Amateur Press Association and you will contact other amateur journalists. Send two 1/4 cent stamps for a sample bundle of amateur papers. Bruce W. Smith, 709 S. Jefferson St., Green Bay, Wis.

Have excellent vacuum cleaner. Will swap for rare U. S. coins of any date. Also pencil with cigarette lighter attached for Eagle U. S. quarter. Michael Shawn, 1234 Stout Street, Denver, Colo.

Chemicals and apparatus wanted by student starting home laboratory. A. Ross Kuntz, 2541 Densmuir, Los Angeles, Calif.

What have you to trade for used radio parts, Jack Nichols, Wilson, Okla.

Have rural and opportunity seekers names and addresses to exchange for watch, camera. P. M. Arrington, Rt. 3, Louisville, Miss.

Will swap electric razor, travel books, sportscope, fire extinguisher (quart size), 3 lens pocket magnifier. Want camera, portable typewriter, gold ore, rough precious stones, prospecting location. Burton Bowen, Alden, N. Y.

I have 57 fine foreign coins, all different, representing 16 nations, to trade for either a ukulele, chromatic harmonica or crystal set. Herb Swilling, 311 Buncombe St., Hendersonville, N. C.

Want Argus AF or other camera. Have aviation scrapbook, picture gun, planes, bombs, old and new, including hundreds of unmounted aviation pictures and data. E. Grant, 123 Horton Highway, Mineola, L. I., N. Y.

Bolt action, 22 Rifle, new Univex folding model camera, 500 all-nations stamps, 150 match covers. Will swap for typewriter, working condition. Raymond Hayton, 2709 Lee Avenue, Monroe, La.

Have unused U. S. and foreign stamps. Want science fiction, original drawings and manuscripts. L. Lee, 2011 Spencer St., Philadelphia, Pa.

Want precancelled and first cover stamps. Have U. S. and foreign stamps. Edward Kelchski, 259 Mulberry St., Kittanning, Pa.

Will swap U. S. stamps for yours. Clair A. Smith, La-mottes Apts., Red Lion, Pa.

Have Alaskan minerals, radio parts, hugh, 5 volumes on Steam Engineering. Want chemicals, apparatus, stamps or coins. Gilbert Monroe, Juneau, Alaska.

Can swap any amount of match covers from Province of Quebec and vicinity for some of yours. Louis Begun, P. O. Box 577, Quebec City, P. Q., Canada.

Have 3 1/2" Kodak film Tank, model B-2, including nine film drying clips and print rollers. What have you to offer? John E. Brooks, 3909 Weems St., Houston, Tex.

Want Indian head pennies. Will trade 40 commemorative or 25 postal stamps. Jack Lowe, Willowbrook, Calif.

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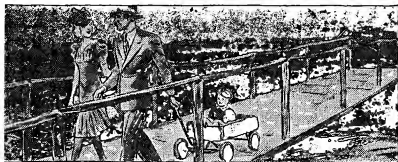
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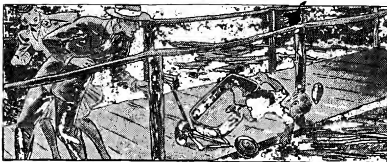
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